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"EFFERVESCENT DEPURATIVE SALINE."—Warranted equal to Eno's or Lamplough's. Perfectly soluble. Costs 10d. per lb. Will keep in any climate.

"RHEUMATIC EMBROCATION."—Rapidly kills pain. Equals St. Jacob's Oil or any other advertised preparation. One quarter the price. Sweet and cleanly.

"LIVER PILLS."—The most perfect combination with Podophyllin. Gentle action, but sure. Purely vegetable. Tonic and stomachic; also

"LUPULINE BITTERS."—Guaranteed of greater medicinal value than the much-advertised "Hop Bitters," decidedly more elegant in appearance, and pleasanter taking. Cost 1s. per lb.

"RED ROSE LOTION."—Invaluable skin depurative (resembling Sulpholine), removes tan, sunburn, roughness, &c., elegant in appearance, delicately perfumed, very profitable.

"TONIC HAIR LOTION."—Most cooling, cleansing, and refreshing; not oily, but renders the hair moist and silky, and stimulates its growth.

"GLYCERINE CREAM."—Perfection of toilet requisites, most useful proprietary for seaside resorts, once used always wanted, quickly removes irritation and redness. Certain to sell, and pays well.

"TIC SPECIFIC."—(Physicians' prescription—concentrated), invariably relieves, has cured when Tonga and Tikheel failed. Can be honestly recommended.

"SANITARY LOTION."—For nits and all uncleanness in children's heads, warranted non-poisonous to all but insect life; one dressing sufficient. Perfectly safe. Large bottles, 1s.

"RINGWORM SPECIFIC."—Two applications will cure the worst case. Cleanly to use; unattended with danger; guaranteed of sterling worth; profitable.

PHYSICIAN'S PRESCRIPTIONS FOR SPERMATORRHEA, and all kindred fearful diseases; over 1,000 cases have been cured and cured by this; recipe (embracing mixture and two lots of Pills), with directions for use, originally cost 5 guineas.

Send for detailed list of 300 Recipes. Post Free. Price of Recipes, 1s. 1d. each. Six for 5s. Twenty-five for £1, with full directions for making, doses, uses, and every particular.

SATISFACTION GUARANTEED.

T. BROOKS, Chemist, LOUTH, LINCOLNSHIRE.

TOILET SOAPS AND PERFUMERY.

Chemists get the **Best Quality at Lowest Prices** direct from the Manufacturers. Before purchasing your Spring Stock send for

J. W. MARTIN & CO.'S PRICE LIST,
PENG, LONDON, S.E. (No Travellers.)

These Twelve Recipes (as sample), Post Free, 10/-.

MAY, ROBERTS & CO.,

9 CLERKENWELL ROAD, LONDON, E.C.

TEMPORARY ADDRESS DURING REBUILDING OF PREMISES, 9 MOOR LANE, E.C.

TELEGRAPHIC ADDRESS—"MOAB LONDON."

CATALOGUE OF DRUGGISTS' SUNDRIES AND PATENT MEDICINES OUT OF PRINT AT PRESENT.

CARRIAGE ON SUNDRIES.—Since 1877 we have allowed 5 per cent. discount on orders for £5 worth of "SUNDRIES" in lieu of Carriage. By this arrangement our Friends are enabled to have enclosures sent with our goods, which they were unable to do when we paid Carriage.

NO TRAVELLERS EMPLOYED — BUYERS ARE THEREFORE SPARED THEIR EXPENSES.
COMPARE OUR PRICES.

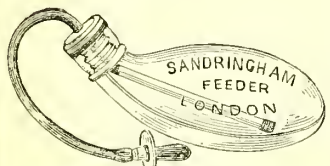
REDUCED PRICES FOR FEEDING BOTTLES.



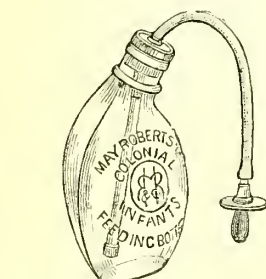
"Sandringham." Earthenware Tops.



"Sandringham." Metal Screw Caps.



"Sandringham." Screw Glass Stoppers.



"Colonial." Earthenware or Wood Tops.

Sandringham (1s.) — WHITE, Earthenware Tops —

With White Fittings, each in box, two brushes .. per doz.	s. d. 6 0
With Black Fittings, each in box, two brushes .. per doz.	6 6
Spare White Fittings ..	3 4
Spare Black Fittings ..	3 10
Spare Bottles ..	1 9

Sandringham (1s.) — WHITE, Screw Glass Stoppers —

With White Fittings, each in box, two brushes .. per doz.	s. d. 6 0
With Black Fittings, each in box, two brushes .. per doz.	6 6
Spare White Fittings ..	3 4
Spare Black Fittings ..	3 10
Spare Bottles ..	2 0

Sandringham (1s.) — WHITE, Screw Metal Caps, Nickel-plated —

With White Fittings, each in box, two brushes .. per doz.	s. d. 7 0
With Black Fittings, each in box, two brushes .. per doz.	7 6
Spare White Fittings ..	4 0
Spare Black Fittings ..	4 6
Spare Bottles ..	2 0

Sandringham (2s.) — WHITE, Gilt Porcelain Tops —

With Black Fittings and Spare Glass Tube, Shield and Teat, each in box, two brushes .. per doz.	s. d. 11 6
Spare Black Fittings ..	5 6
Spare Bottles ..	2 0

Sandringham (3s.) — WHITE, Gilt Porcelain Tops and Cut Glass Stopper —

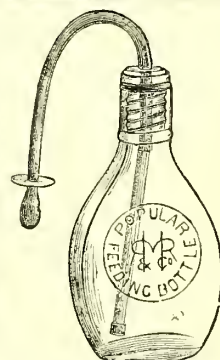
With two sets of Brown Fittings, each in box, two s. d. brushes .. per doz.	19 0
Spare Brown Fittings ..	7 3
Spare Bottles ..	7 3

Colonial (6d.) — GREEN, Boxwood or Earthenware Tops —

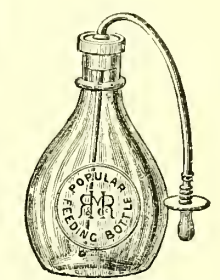
With White Fittings, each in box, two brushes .. per doz.	s. d. 2 10
With Black Fittings, each in box, two brushes .. per doz.	3 1
With White Fittings, 1 dozen in box .. per doz.	2 4
With Black Fittings, 1 dozen in box .. per doz.	2 7
If with White instead of Green Bottles .. per doz. 2d, extra	
Spare White Fittings per doz.	1 4
Spare Black Fittings ..	1 7
Spare Green Bottles ..	1 0
Spare White Bottles ..	1 2

Colonial (6d.) — GREEN, Screw Glass Stoppers —

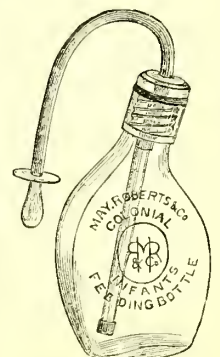
With White Fittings, each in box, two brushes .. per doz.	s. d. 3 6
With Black Fittings, each in box, two brushes .. per doz.	3 9
With White Fittings, 1 dozen in box .. per doz.	3 0
With Black Fittings, 1 dozen in box .. per doz.	3 3
Spare White Fittings ..	1 6
Spare Black Fittings ..	1 9
Spare Bottles ..	1 9



"Popular." Screw Glass Stoppers.



"Popular." Earthenware or Wood Tops.



"Colonial." Screw Glass Stopper.

Popular (6d.) — GREEN, Boxwood or Earthenware Tops —

With White Fittings, each in box, two brushes .. per doz.	s. d. 2 10
With Black Fittings, each in box, two brushes .. per doz.	3 1
With White Fittings, 1 dozen in box .. per doz.	2 4
With Black Fittings, 1 dozen in box .. per doz.	2 7
If with White instead of Green Bottles .. per doz. 2d, extra	
Spare White Fittings per doz.	1 4
Spare Black Fittings ..	1 7
Spare Green Bottles ..	1 0
Spare White Bottles ..	1 2

Popular (6d.) — GREEN, Screw Glass Stoppers —

With White Fittings, each in box, two brushes .. per doz.	s. d. 3 6
With Black Fittings, each in box, two brushes .. per doz.	3 9
With White Fittings, 1 dozen in box .. per doz.	3 0
With Black Fittings, 1 dozen in box .. per doz.	3 3
Spare White Fittings ..	1 6
Spare Black Fittings ..	1 9
Spare Bottles ..	1 9

Popular (1s.) — WHITE, Earthenware Tops —

With White Fittings, each in box, two brushes .. per doz.	s. d. 4 6
With Black Fittings, each in box, two brushes .. per doz.	5 0
Spare White Fittings ..	2 6
Spare Black Fittings ..	3 0
Spare Bottles ..	1 2

Popular (1s.) — WHITE, Screw Glass Stoppers —

With White Fittings, each in box, two brushes .. per doz.	s. d. 4 6
With Black Fittings, each in box, two brushes .. per doz.	5 0
Spare White Fittings ..	2 6
Spare Black Fittings ..	3 0
Spare Bottles ..	1 9

Colonial (1s.) — WHITE, Earthenware Tops —

With White Fittings, each in box, two brushes .. per doz.	s. d. 4 6
With Black Fittings, each in box, two brushes .. per doz.	5 0
Spare White Fittings ..	2 6
Spare Black Fittings ..	3 0
Spare Bottles ..	1 2

Colonial (1s.) — WHITE, Screw Glass Stoppers —

With White Fittings, each in box, two brushes .. per doz.	s. d. 4 6
With Black Fittings, each in box, two brushes .. per doz.	5 0
Spare White Fittings ..	2 6
Spare Black Fittings ..	3 0
Spare Bottles ..	1 9

EXCHANGE COLUMN.

TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word. If name and address are not included, one penny per word must be paid.

DEPOSIT OF MONEY.—In order to ensure safety we offer the following system:—The Purchaser of anything advertised in the Exchange Column may remit the amount to us. We acknowledge receipt to both parties by post-cards, and only pay the money deposited on the advice of the remitter. Whether returned to him or paid to the seller, we charge a commission of 6d. on any transaction of 3l. or less, or 1s. if above that amount.

Please note that the Exchange Column will appear Weekly. Advertisements must be received not later than Thursday in each week. Chemists will do well to look up their Surplus Stock and send an Advertisement of same.

FOR DISPOSAL.

Drugs and Chemicals.

Bismarck brown, 1s. 6d. lb.; zinc oxyde, 6d. lb.; Fuller's earth, 6s. for 2 cwt. bag. J. Parker, Middleton, Manchester.
7 lbs. indigo, 5s. lb.; ol. amygd. ess., 1s. 8d. oz.; barrel turpentine, 29s. cwt.; 4 lbs. potassii iodid., 9s. 6d. lb. J. C. Lingdale, Skelton, R.S.O.

Optical.

Seventy-eight pairs Lawrence's spectacles and folders, cost 9l.; what offers? 67/131.

Proprietary Articles.

Cash offers solicited for the following patents, clean:—1 Brook's Arabian food, 11s.; 5 anti-lactie, 1s. 1½d.; 3 zylbalsamum; 3 Eno's phosphorised iron and quinine, 2s. 9d.; 1 ditto, 4s. 6d.; 1 Hayman's balsam, 2s. 9d.; 16 malted infants' food, 6d.; 2 Dr. de Roos' vegetable life pills, 4s. 6d.; 2 ditto, 2s. 9d.; 2 ditto, 1s. 1½d. Address, Baxter, Chemist, 18 Ivegate, Bradford, Yorks.

Educational.

"Notes on Dispensing," specially written for Minor students; post free 12 stamps. Tully, Chemist, Hastings.
"Year-book of Pharmacy," from 1833 to 1834 for disposal; what cash offers? F. Guy, 12 North Street, Brighton.
Bargains (post free)—Attfield's "Chemistry," 7s.; White's "Latin Dictionary," 1s. 6d.; set illegible autograph prescriptions, 1s. 2d. Walter Noak, Market Place, Bromsgrove.
"Dispensing Notes," as given at well-known College of Pharmacy, post free 13 stamps. Clifton, 13 St. Michael's Terrace, Wood, Green, London.
Set of illegible autograph prescriptions (original) 2s. 6d., as presented to the Pharmaceutical Society of Ireland for their examinations; 30 prescriptions (each and different) given to dispense at Minor during past 12 months, 2s.; 50 questions asked of successful students at last Minor, 1s. 1d.; new "Pharmacopoeia," 5s.; lot of cheap, almost new, books; Attfield's "Chemistry," 1836, 12s.; Squire's "Companion," 1836, 8s. 6d.; carriage paid; stamp for list. Saunders, Medical Tutor, 6 Rochester Square, N.W.

Lithographed "Aids to the Minor: Medical, Latin, and Prescriptions," 3s.; "Progressive Exercises in Equations," 2s.; "The Chart," 1s.; "Minor Chemical and Physical Problems," 1s.; "Exercises in Dispensing," 1s.; or the set 5s. H. Judd, 31 Regent Square, W.C.

Books, second-hand: education, history, theology, poetry, chemistry, surgery, medicine, fiction, less than half-price; magazines: *Quiver*, *Good Words*, &c., parts, 2s. 6d. per year, bound volumes 3s. 6d.; Latin, French, Greek, German school books; Conybeare and Howson's "St. Paul" (42s.), for 28s.; Cassell's "Family Physician," new, 18s.; "Ladies' Physician," new, 5s.; magnificent family Bible, new (7l. 7s.), for 60s.; all new books at wholesale prices; write for price of any book you want. Walker, Seacombe.

Literature.

Last 13 years' *Chemist and Druggist*, 50s., or offers; over 11l. (published price) piano new music, 14s. Hartley, Leek.
Chemist and Druggist's Journal, from 1830 to 1835, both inclusive, bound, good condition; also practical works on manufacture of chemicals. Buxton, 4 Clare Gardens, Canton, Cardiff.
Chemist and Druggist's, odd numbers, from 1831, post free 9d. each; last 8 volumes complete, 5s. each, carriage free; *Journal*, odd, from 1872, 3d. each, post free; or what offers? Williams, Chemist, Coleford, Gloucestershire.

Soda-water Plant.

A bargain.—Engine, boiler, soda-water machine for hard or power, generator, gasometer, filling-machine for corks, McEwen's self-syrup for patent bottles, in good working order, complete; putting down larger plant. Arthur Hill, Chemist, Cheltenham.

Shop Fittings.

Twenty 4lb. blue gold labelled ointment jars, 2s. 3d. each; 4 engraved acid bottles, 4s.; 4 gallon iron mortar and pestle, 18s.; pair 4 lb. French counter-scales, 15s. 6d.; pair 10 lb. ditto, 18s.; pair 4 lb. marble ditto, 17s.; 4 oz. verified measures, 10s. dozen; pint tincture press, 4s. 6d.; 16 oz. blue (p'ng) syrup bottles, 9d. each; ten 20 oz ditto, 8s.; nine 30 oz. ditto 8s. 6d. Simcock, 17 Guildford Street, Leeds.

Three specie-jars, 24 in. high, 12½ in. diam.; what offers? 297/13.

12 ft. run drawers, shelving, and lockers complete, mahogany-fronted, gold-labelled, 7l. 10s.; 10 doz. good gold-labelled shop rounds, regular lot, 7s. 6d. doz.; blue ex. pots; 6, 4 gal. carboys and stands, cut stoppers, 10s. each; 6 doz. ½ gal. black stock bottles, japanned caps, gold-labelled; 12 doz. 24 pink ointment jars, dome covers, gold-labelled, 3s. 9d. each; a quantity of composition mortars; tincture-press; marble mortars; 3 specie-jars, 27 in. high, glass gold covers, 25s. each; 1 pair ditto, ditto, as Maw's list, on octagon mahogany stands, glass gold covers, total height 35 in., 6l. pair, worth double; pill-machines to cut 24 (3, 4, or 5 grain), 16s. E. Natali, 207 Old Street, near Pitfield Street, E.C.

Dental cabinet, fitted with 7 drawers, polished mahogany, 28s.; dental instruments; brass pillar scales; dispensing ditto; 12 ft. fixture drawers; lockers; shelving, a good lot, 7l. 10s.; 12 ft. Spanish mahogany counter; 9 ft. ditto ditto; several mahogany-top counters, grained mahogany fronts; 2 ft. counter-case, 30s.; 2 ft. 6 in., 35s.; 3 ft., 40s.; 5 ft. ditto, ditto, a 1, 9l.; 3 ft. bent plate glass counter-case, a 16, 55s.; 3 ft. 6 in. ditto, ditto, 60s.; 4 ft., 70s.; 4 ft. ditto, ditto, as fig. A 17, 75s.; 2 ft., 3 ft., and 4 ft., as fig. A 3; 6 ft., as fig. A 8; 4 ft., as A 7; 8 ft., fig. A 15, 7l.; toothbrush-case, as fig. A 9, 35s.; A 10, 50s.; ditto, ditto, open at back, 30s.; cigar case, as fig. A 33, 7 holes, 60s.; desk and case, as fig. A 31; show steps, A 37, 60s.; sponge-cases, A 41, 60s.; A 43, 3 ft. long, 95s.; dispensing screens, 4 ft. long, A 54; 5 ft. long, A 55; and 6 ft. long, as A 55; 7 ft. 6 in. long, ditto, ditto; 5 ft., 6 ft., 7 ft. plate-glass dispensing screens, glass case at each end, with silvered plate glass centre, with marble slab in front, very elaborate, from 7l. 10s.; 10 ft. and 6 ft. plate-glass and mahogany counters, as A 64; mahogany wall-case, 7 ft. 7 in. long, 6 ft. 6 in. high, silvered plate-glass centre door, 8l.; ditto, ditto, 7 ft. 4 in. long, 35 in. high 6l. 10s. E. Natali, 207 Old Street, near Pitfield Street, E.C.

Formulæ.

Ginger wine essence, sells well, recipe with instructions, 1s. 6d. Prosser, Chemist, Gateshead.

[Continued on next page.]

Mit. copaibre et cubebe co., a splendid emulsion, creamy; will keep almost any length of time; commands immense sale; recipe, with full instructions, post free 5s. Clifton, 13 St. Michael's Terrace, Wood Green, London.

The fact that Brooks's formule have satisfied over 1,200 chemists must prove their worth; fifth year continuous advertising: "Occasional Pills," for ladies, equal Welch's; "Essence for Deafness," simple, safe, certain; "Tannin Gargle," rapidly efficacious, pleasant; "Mollispena," certain cure for tender feet; "Glycerine Cream," splendid proprietary, purifies, softens, and whitens skin; "Toothache Cure," never fails, instantly efficacious. Recipes 1s. 1d. each, 3 for 2s. 6d., with full instructions and detailed list free. See "How a Chemist Made a Fortune." T. Brooks, Chemist, Louth, Lincs.

Miscellaneous.

I have 2 bottles of Syme's musk left, 20s. each. Richardson, Alford.

Harden "Star" hand grenades being overstocked, a few doz. for sale. Wilson, Chemist, Harrogate.

Linoleum, 10 ft. 8 in. by 9 ft. 7 in., good condition; specie-jar, 2 ft. 6 in. high, new; "Enterprise" tincture-press. Doubleday, Dorking.

Gum, 1s. 1b.; 1b samples on receipt of 15 stamps. Rayson, Chemist, Nottingham.

Surplus rough sponge, undamper, about 500 pieces; some very large, 10 to 12 to the lb., suitable for cab and stable use; 3s. 6d. per lb. Robinson, Chemist, Myton Place, Hull.

Surplus sundries, all guaranteed in perfect condition:—3 grs. best white teats, 4s. grs.; 5 grs. black teats, 5s. grs.; black tubing, 7s. 1b.; 1 grs. screw-stoppered feeders, black fittings, 33s. grs.; 12 doz. bent feeders, black fittings, 27s.; 6 doz. ditto, red, 13s.; 1-oz. stoppered "Lubins," 16s. 6d. grs.; 10, 30-oz. oil bottles, 1s. 8d. each; 5 grs. each, 3 and 4 oz. dispensing bottles, 6s. grs.; ditto, 6 and 8 oz., 7s. grs.; best vial corks, 6d. grs.; 1 gr. 3-oz. wood-capp d pomade bottles, 12s. 6d.; 2-oz. deep nested willows, 2s. 9d. grs.; ream white demy, 4s.; blue ditto, 6s. 6d.; ditto, scifiliz, 6s. 9d.; 6 Higginson's enemas, complete, 12s.; 3 grs. 1d. furniture cream bottles, 6s.; 300 8-inch filtering paper, 2s.; Boats feeders, 3s. 6d. doz.; glass nipple shells, 1s. 10d. doz.; 12 grs. 1-dram pink bats, 4s.; 1 doz. porce'ain sick feeder cups, 4s. 6d.; 4 gross 1½-oz. vials for 15s.; 3 grs. 2-dram, 8s.; 2 grs. ½-oz., 5s. 9d.; 2-oz. heavy panelled flats, 7s. grs.; 6 doz. 1-oz. glass opal covered pots, 8s.; 1 grs. 2-oz. nickel screw pomades, 17s.; 1½-in. flat varnish brushes, 4s. 6d. doz.; 1,000 soft copaiba capsules, 7s. 3d.; 1 grs. 8-oz. plug salines, 13s. 6d.; 12 grs. ginger-beer corks, 8s. Simcock, 17 Guildford Street, Leeds.

Surplus 1d. Janek's camphor lozets, 6d. and 1s. thermometers, in exchange for drugs or patents. Edgson, Nottingham.

Composition mortar and pestle, capacity 10 pint; upright case with desk, as Maw's fig. A 32; counter-case, as Maw's fig. A 18; patents and sundries, in good condition. Stores, Promenade, Malvern.

Surplus Stock.—23 lbs. hydrarg. sulph., 2s.; 14 lbs. gum olibani, 10d.; 4 oz. croton chloral, 2s.; 3 lbs. chlorodyne, 4s.; 10 lbs. tinct. gent., 2s.; 4 oz. ol. santal flav. ang., 1s. 4d., &c., &c.; gross vaccination shields, 24s.; 15 doz. Herbert's glue, 3s.; large quantity glass syringes, enemas, &c.; also 54-in. Timberlake bicycle, ball bearings, cost 15l., 7l. Gerring, Chemist, Witney.

WANTED.

Glass sponge-case. Doubleday, Dorking.

Tooth-brush cases, damaged ones would be bought; also powder mixers. Little, Evans, Hauover Street, Liverpool.

Muter's "Analytical Chemistry," "Pharmaceutical Chemistry," and "Materia Medica"; Ince's Latin Grammar; for cash. Colman, 96 Tottenham Court Road.

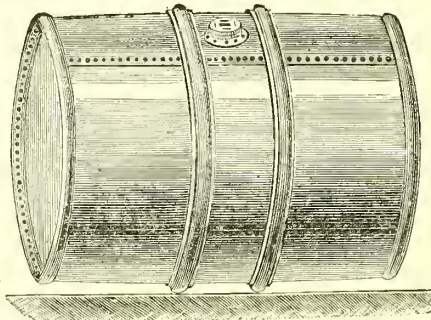
B. NOAKES & CO.,

MANUFACTURERS OF
Metallic Casks, Drums, & Kegs
ENAMELLED, PLAIN, AND DECORATED
TIN CANISTERS AND BOXES,
FOR PACKING CHEMISTS' AND DRUGGISTS' SUNDRIES.

ENAMELLED SHOW CARDS.

IRON BARRELS,
CAPACITY 40 TO 120 GALLONS
AS PER ILLUSTRATION.

Cable and Telegraphic Address—
"NOAKES LONDON."



These large Iron Casks, similar to sketch, can be handled with equal facility to wooden barrels, and, owing to their strength and durability, can be used over and over again for an indefinite period. They are perfectly liquid tight, being tested at a very high air pressure, and, unlike wood, do not absorb any of the contents. They are all fitted with interchangeable screw bungs, and can also be fitted with screw plug in head, for draw-off tap.

They are specially adapted for all kinds of Chemical Products, Sulphuric Acid, Glycerine, Spirits, Oils, Turpentine, Petroleum, Benzoline, Varnishes, Tar, Naphtha, Mineral Extracts, and Inflammable Liquids of every description.

We are making them in three qualities, "Black Iron," "Lead Coated," and "Tinned."

PRICE LIST ON APPLICATION.

Offices and Works: 142 SPA ROAD, BERMONDSEY, LONDON, S.E.

M. A. CRAVEN & SON, WHOLESALE AND EXPORT CONFECTIONERS,

MAKERS OF

Medicated Lozenges, Refined Liquorice, Jujubes, and every description of Confectionery,

IMPORTERS AND MANUFACTURERS OF LEMON, ORANGE, AND CITRON PEELS.

EBOR CONFECTIONERY WORKS.
YORK.

Lozenges of all descriptions made from Customers' private formulæ (or ingredients), and stamped with any name or device.

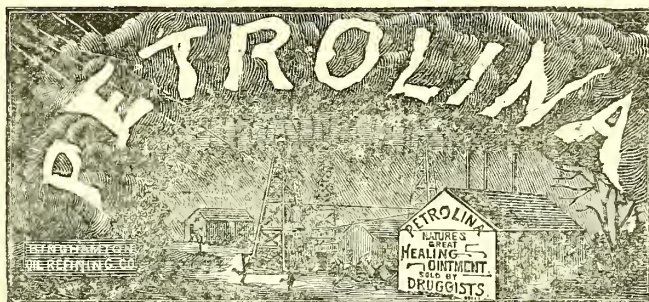
SPECIALITIES—Cough, Peppermint, Rose, Musk, Bouquet, Cachou, and all kinds of Medicated Lozenges.

ESTABLISHED 1843.

PRICE LIST ON APPLICATION.

PARAFFINUM MOLLE, B.P.

KEEPS SWEET
IN ANY
CLIMATE.



NEVER
BECOMES
RANCID.

A GENUINE PETROLEUM JELLY, OF GUARANTEED PURITY.
Manufactured IN AMERICA by the BINGHAMTON OIL REFINING CO., BINGHAMTON, NEW YORK, U.S.A.

PETROLINA, unlike many worthless substitutes, is made from CRUDE PETROLEUM *only*, WITHOUT THE AID OF ACIDS OR ALKALIES. It is entirely odourless and tasteless, and, being of firmer and more tenacious consistency than any other petroleum jelly, is better adapted as a base for ointments and pomades.

Since the adoption of petroleum jelly by the British Pharmacopœia as an official preparation it behoves the Chemist to see that the article he uses really

EMBODIES ALL THE REQUIREMENTS OF THE PHARMACOPŒIA.

PETROLINA is now put up in Kegs of 56 lbs. and 112 lbs., Drums of 14 lbs. and 28 lbs., and Tins of 5 lbs. and 1 lb., AT REDUCED PRICES. Also supplied in Casks of 2 cwt. to 3 cwt.
Samples, Quotations, and Formulas for Official Cerates and Ointments free on application.
To be had of all Wholesale Druggists, Drysalters, and Sundriesmen.

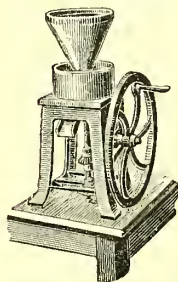
E. A. DE PASS & CO., 3 COLEMAN STREET, LONDON, E.C.
Sole Agents for Great Britain.

NOTICE.—As preparations of similar name, but very inferior quality, are sometimes supplied in lieu of PETROLINA Buyers are requested to see that our Trade Mark, as above, appears on all packages purporting to be PETROLINA.

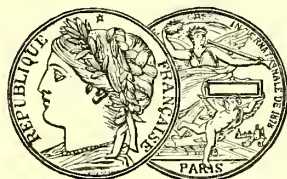
FOLLOWS & BATE, LIM., Engineers,
Dutton Street Works, MANCHESTER.

HORIZONTAL
MILL.

For Dry Powders.



IMPROVED & LATEST MACHINERY



PARIS, 1878.

FOR
DRUG GRINDERS,
WHOLESALE
Chemists & Druggists

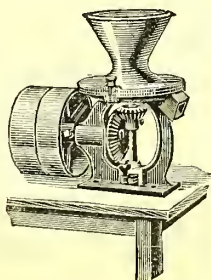
&C.



VIENNA, 1873.

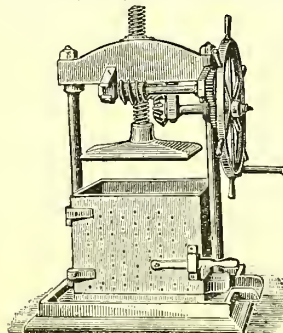
NEW DRUG MILL.

For Ginger, Roots, and all kinds of friable materials.



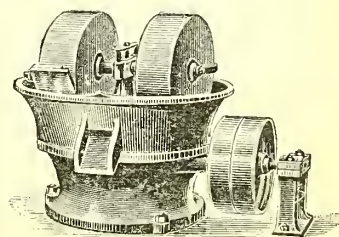
COMPOUND PRESS.

For Tinctures, &c. (made in Wood and Iron).



**POWER EDGE RUNNER
MILL.**

With Iron or Granite Rollers and Bed.

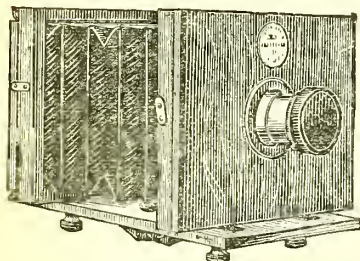


PHOTOGRAPHIC APPARATUS,

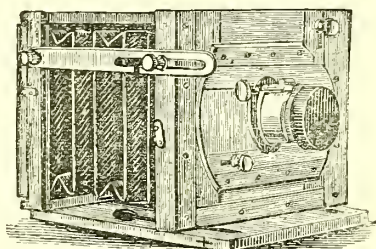
FOR TOURISTS, BICYCLISTS, TRICYCLISTS, ETC.

Over 18,000 Now Sold.

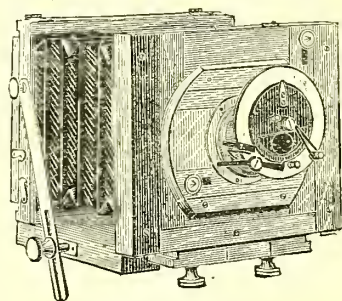
Each Apparatus includes CAMERA LENS and STAND. CYCLE CLIP may be had in place of STAND.



LE MERVEILLEUX.



LE MÉRITOIRE.



THE INSTANTOGRAPH.

EACH APPARATUS

GUARANTEED PERFECT. LENSES EQUAL

TO BEST MONEY CAN PURCHASE.

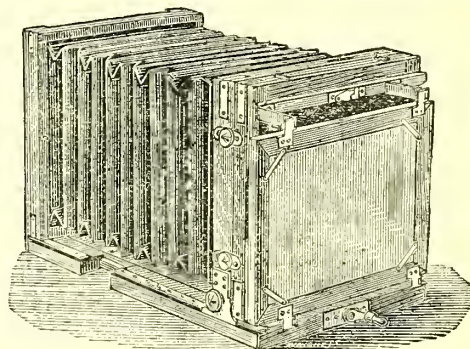
	£1	¹ ₁	0	£2	¹ ₂	£3	¹ ₃	£4	^{10 by 8} ₄	£5	^{12 by 10} ₅
Le Merveilleux	£1	¹ ₁	0	£2	¹ ₂	£3	¹ ₃	£4	^{10 by 8} ₄	£5	^{12 by 10} ₅
Le Méritoire	1	11	6	3	3	4	10	6	0	7	10
The Instantograph ..	2	2	0	4	4	6	6	8	8	10	10
The Ladies' Camera...	1	15	0	3	0	4	5	5	10	7	0
The Patent Camera } (no Lens or Stand) }	2	10	0	4	0	5	0	6	0	7	0

Sets of Plates, Dishes, Chemicals, Lamp, &c., with full instructions, $\frac{1}{4}$, 6/6; $\frac{1}{2}$, 12/; $\frac{3}{4}$, 20/; 10 by 8, 25/.

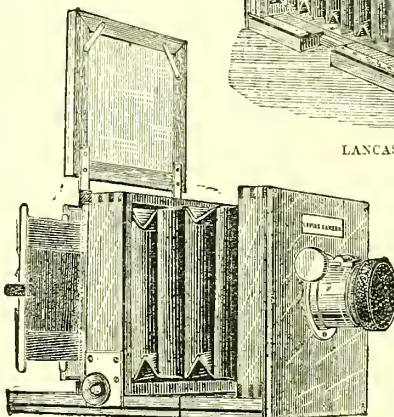
Sets of Printing Materials, Sensitised Paper, Printing Frame, Dishes, Toning and Fixing Solution, and full instructions, $\frac{1}{4}$, 5/; $\frac{1}{2}$, 10/6; $\frac{3}{4}$, 15/; 10 by 8, 21/.

Dry Plates, $\frac{1}{4}$, 1/6; $\frac{1}{2}$, 3/6; $\frac{3}{4}$, 7/; 10 by 8, 11/ per doz.

Instantaneous, $\frac{1}{4}$, 2/; $\frac{1}{2}$, 4/; $\frac{3}{4}$, 8/; 10 by 8, 12/ per doz.



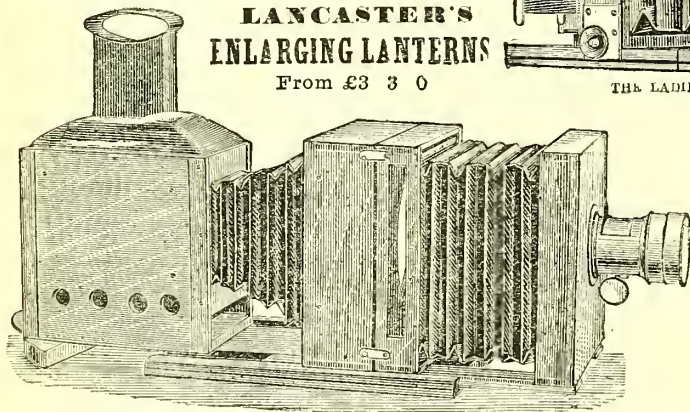
LANCASTER'S PATENT CAMERA.



THE LADIES CAMERA.

LANCASTER'S ENLARGING LANTERNS

From £3 3 0



LANCASTER'S ENLARGING LANTERN

Illustrated Catalogue

Post Free

to Chemists.

TENTH THOUSAND.

"How to be a Successful Amateur Photographer," by W. J. Lancaster, F.C.S., &c., 64 pp., 6 Stamps.

SPECIAL TERMS
TO CHEMISTS.

J. LANCASTER & SON, OPTICIANS, BIRMINGHAM.

S. MAW, SON & THOMPSON

HAVE JUST RECEIVED

A LARGE CONSIGNMENT OF EGYPTIAN LOOFAHS OF EXCEPTIONALLY GOOD QUALITY.

PRICE TO THE TRADE:

From 4s. to 12s. per doz., according to size.
Very large Picked Specimens, uncut, for
Show, from 1s. 6d. to 2s. 6d. each.

S. MAW, SON & THOMPSON, LONDON.

THE MORGAN CRUCIBLE COMPANY

(SOLE MANUFACTURERS OF MORGAN'S AND SALAMANDER CRUCIBLES),

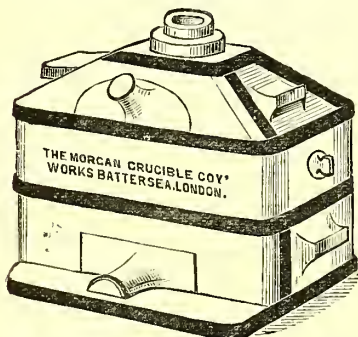
BATTERSEA WORKS, LONDON, S.W.

PORTABLE FURNACES,

FOR USE WITH CHARCOAL, COKE, &c.

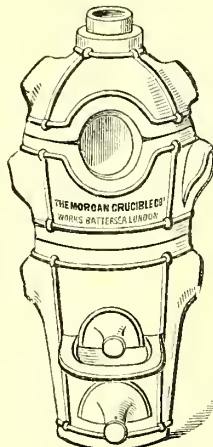
IRON BOUND. INTERIOR DIMENSIONS.

TUBE.



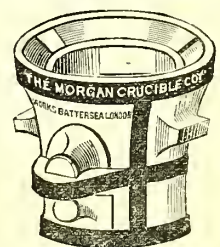
No.	Long.	Wide.	Price.
1 ..	9½ in.	5½ in.	£0 16 0
2 ..	10 "	6 "	0 18 0
3 ..	10½ "	6½ "	1 0 0
4 ..	13 "	6¾ "	1 5 0

UNIVERSAL.



22 ins. high with chimney (¾ ins.), 9 ins. wide out,
6 ins. wide in, 15s.
The UNIVERSAL FURNACE, useful for Laboratory.
For distilling, as shown in engraving, 1-pint capacity.
Retorts, 20s. per dozen; with Muffle Ring 3s. extra,
for Muffles 7 x 24 x 24 (Muffles, 12s. per dozen); Ring
for tube use, 3s. extra. Base for stand Furnace on
lecture table, 3s.

EVAPORATING.



No.	Diam. Inside.	Price. s. d.
1 ..	4½ in.	2 6
2 ..	5½ "	3 6
3 ..	6½ "	4 6
4 ..	8½ "	6 0
5 ..	10 "	8 0
6 ..	10½ "	12 0
7 ..	11½ "	15 0
8 ..	13 "	18 0

NOTICE.—Care should be taken when indenting to specify

THE MORGAN CRUCIBLE CO. (Sole Manufacturers of Morgan's and Salamander Crucibles), Battersea Works, LONDON, S.W.

VEGETABLE BUTTER COLOURING

(OF OUR OWN MANUFACTURE).

THIS PREPARATION has been before the trade upwards of four years, and is rapidly increasing in favour; it is superseding the Danish and all other makes, being quite as efficient and much cheaper; it does not deposit or crust on the bottles, as is often the case with the foreign-made article. It contains no Aniline, is free from the bitter taste common to most other colorants, and has the great advantage of NOT COLOURING THE BUTTERMILK. To purchasers of bulk, it affords a considerable source of profit, and is well worth the attention of Druggists in the grazing districts.

Price in bulk, $\frac{1}{4}$ per lb.; $\frac{1}{2}$ in 2-gallon bottles, less 5 per cent. discount. Special quotations in larger quantities.

To meet the views of many of our friends, we have commenced to put this article up in bottles also, under the title and trade-mark of the "Silver Churn." It is very attractively got up, and will command a ready sale; the bottles contain more than either Danish or American, while the price to the retailer is lower than that of any other Butter Colouring in the Market.

Price in Bottles { 6d., 1/-, 2/- Size } Less 10 per cent. Discount.
 { 4/-, 8/-, 16/- Per doz. }

A handsome Show Card, printed in colours, and suitable Counter Bills may be had on application.

PROPRIETORS AND MANUFACTURERS—

OLDFIELD, PATTINSON & CO.,

WHOLESALE DRUGGISTS,

17 TODD STREET, MANCHESTER.

May be ordered through any Wholesale House, or of our

London Agent—B. SUART, 24 Queen Victoria St. (who holds Stock of all sizes).

SUPPLEMENT TO "THE CHEMIST AND DRUGGIST."

SATURDAY, APRIL 3, 1886.

i

STRONGEST "SAFE DISINFECTANTS."

CALVERT'S PATENT 50 % CARBOLIC POWDER

Sold in 6d. and 1s. Tins, 4s. and 8s. per dozen; and in 7-lb. and 14-lb. Self-opening Tins, at 3s. and 5s. 9d. each, less usual discounts. It can be used with water.

CALVERT'S PATENT SOLUBLE CRESOL

Is a combination of Cresylic Acid (Cresol) with Carbolic Acid (Phenol), Creasote, and other ingredients needful to make it a useful disinfectant, readily miscible with water in any proportion. Its antiseptic strength is much above that of any other "Soluble" disinfectant, and consequently it is far more effective.

7,	16,	and 30 oz. Bottles	} Cases extra.
4/	8/	" 12/- per Dozen.	
1	Gallon Tins ...	50/- per Dozen.	
5	"	Drums, 3/9 per Gall.	} Inclusive of Drums and Casks.
36	"	Casks, 3/4 " "	

Full Instructions for use on each Package.

REPORT FROM AN EMINENT SHEEP FARMER IN SOUTH AFRICA.
—"It is without doubt a cure (for Scab), besides having in its favour undoubted cheapness as compared with most other dips."

F. C. CALVERT & CO., MANCHESTER.

Awarded 42 Gold and Silver Medals, Diplomas, &c.

W. KEMP & SON, HORNCASTLE.

DEAR SIR,

We direct attention to the exceedingly fine quality of our No. 1 BEST LIGHT CRUSHED LINSEED, containing all the Oil.

It is crushed from a special growth of Linseed, which being extremely fine and bold, and at the same time having an exceedingly thin skin, gives when crushed a very large proportion of Meal to Husk.

We guarantee it to be strictly Pure, and cannot be too emphatic in stating this. All particles of dirt, grit, foreign seeds, &c., are carefully removed, and our increasing sales show that our care in this respect is appreciated. Nothing better can be obtained.

It is lightly crushed, and will keep far longer than when heavily crushed and bruised, as in this case, the Oil being partially pressed out, the sample is darker, and will not keep so well. Applications for samples invited. Always esteeming your orders,

W. KEMP & SON.

No. 1.—BEST LIGHT CRUSHED LINSEED, containing all the Oil, guaranteed strictly pure. 18.6 per cwt. Bag free.

LONDON AGENTS—

MESSRS. BARCLAY & SONS, 95 Farringdon Street,
Who hold Stock and supply 1 cwt. at above price, and smaller lots at 20/- per cwt.

Special Quotations for quantity. Ordinary Crushed Linseed at lowest market prices. Samples free.

OIL PEPPERMINT, SPERMACEI, SARSAPARILLA, AND OTHER AMERICAN PRODUCTS,
OFFERED BY
STALLMAN & FULTON,
IMPORTERS AND EXPORTERS, NEW YORK.

TRADE



MARK.

J. A. WINK & CO., Ltd.,

MANUFACTURING CHEMISTS.

Office and Warehouse—2 DEVONSHIRE SQUARE, LONDON.
Works—QUEENSFERRY, FLINTSHIRE.

SPECIALTIES—

Morphia Alkaloid, in powder and crystals, and all its Salts, Codeia,
Apomorphia Mur., Narceine, Papaverine,
Meconic Acid, all other Opium Products, and Fine Chemicals.

Telegraphic Address—"APOMORPHIA LONDON."

TRADE



MARK.

THOMPSON, MILLARD & CO.

LIMITED,

CURTAIN ROAD, LONDON, E.C.

Telegraphic Address, "BEATROP LONDON."



WHOLESALE & EXPORT

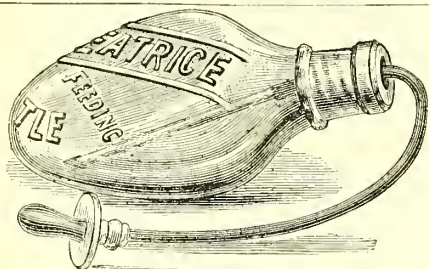
DRUGGISTS' SUNDRIESMEN,

DRUGGISTS,

SURGICAL INSTRUMENT MAKERS, PERFUMERS, ETC.

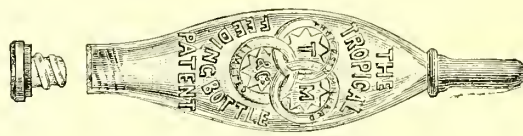
Sole Proprietors of the "Mater," "Bristol," "Imperial,"

BEATRICE AND TROPICAL FEEDING BOTTLES.



THE "BEATRICE" FEEDING BOTTLE.

With opal glass screw stopper, best black rubber fittings, each in handsome shouldered box arranged to stand the feeder in while filling, and tube and bottle brush, per dozen 8s, subject to usual discount. This Feeder combines the advantages of the straight and bent neck bottles, can be laid on either side without leakage, and is easily cleaned.



THE "TROPICAL" FEEDING BOTTLE.

THOMPSON, MILLARD & Co.'s new PATENTED Boat-shape Feeding Bottle. Fitted with screw glass stopper or metal screw cap at end to allow of cleaning. In two sizes. Illustrated Price List on Application.

Special attention paid to Export Orders, and Illustrated Price Lists posted free to any part of the world on application.

Our goods give universal satisfaction, and buyers may with confidence favour us with a Trial Order.


THOMPSON, MILLARD & CO., LIM., LONDON.

Telephone Number,
1852.

Advertisers' & Buyers' Reference List, AND INDEX TO ADVERTISEMENTS.

TELEGRAPHIC ADDRESS—
CHEMDRUG
LONDON.

ADVERTISEMENTS APPEARING IN THIS ISSUE OF "THE CHEMIST AND DRUGGIST."

 Please note that to satisfy Post Office requirements the Advertisements are paged twice—once in Arabic, once in Roman numerals.

A	JESULAP BITTER WATER CO., LIM. TEXT 264 ALLEN & HANBURY'S Cod Liver Oil, Wholesale Druggists COVER A1 MENTHOL CONES (Shirley, J. G.) vii APOLLINARIS CO. Apollinaris Water, Hunyadi Janos xi ASSISTANTS WANTED 7 AYRTON & SAUNDERS "Silver" Comb and Menthol Cones, Various B x, Dyes for Easter Eggs 27
B	BIRKBECK BANK Bank and Building Society xvi BLYTON, T., HAGE & CO. Medicated Lozenges xv BOEHM, GUS. Perfumery, Soap, & Menthol Charms 24-26 BOLE HALL MILL CO. Surgical Bandages 26 BORROUGHS, WELLCOME & CO. Compressed Tablets ix BOURNE, JOHNSON & LATIMER Catalogue vii BRATBY & HINCILIFFE Aerated Water Machinery 18 BRITOW, T. F., & CO. Perfumery x BROOKS, T. 7 BUSINESSES FOR DISPOSAL 6
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D	DAY, SON & HEWITT Veterinary Medicine Chests 20 DE PASS, ED., & CO. Petrolins 11 DOBELL, DR. Books 4 DURAFORT Syphons and Seltzogenes 16
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H	HALLER & CO. Lanoline x HAY, W. Soluble Essence Lemons, Ess. of Ginger 19 HEARON, SQUIRE & FRANCIS Terebene, TEXT 244 HENRY, T. & W. Magesia xvi HODGE & CO. Improved Truss xvi HOOPER & CO. Water Bed FRONT COVER HOWARD & SONS Quinine and Pharmaceutical Chemicals xiii HOMOEOPATHIC HOSPITAL Hospital and School HORN & SON Patent and Trade Mark Agents 26 HUNYADI JANOS 18 HUNTER SIFTER CO. Sifters, Mixers, &c. xx
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K	KEMP & SON Crushed Linseed i KIMPTON, H. Books, discount 4 KINMOND & CO. Mineral Waters 18 KILNER BROS. Feeding and Dispensing Bottles xvi
L	LANCASTER & SON Photographic Apparatus 12 LANGTON, EDDEN, HICKS, & CLARK Wholesale Druggists xii LEVERMORE, AUG., & CO. Pure Precipitated Chalk 26 LLOYD, A. S. Excesses 26 LONDON HOMOEOPATHIC HOSPITAL 4 LYNCH & CO. Electro Magnetic Hair and Flesh Brushes COVER New Registered Funnel 28
M	MAIGNEN, P. A. Filters—"Anti-Calcaire" Powder xix MARTIN, J. W. Soap, Perfumery 7 MARTINDALE, W. Nitro Tablets xv MASON, H., & CO. Waxes and Satin Paper xv MAW, SONS & THOMPSON. Foodstuffs 13, Menthol 23 MCNAUGHTON Agencies 7 MAY & BAKER Pharmaceutical Chemicals and Camphor Tablets, Mercantiles, Ethers, Bismuth, Soda Carb. COVER MAY, ROBERTS & CO. Feeding Bottles 8 MISCELLANEOUS ADVERTISEMENTS 7 MORGAN CRUCIBLE CO. Crucibles, Porous Pots, &c. 26 13 MUMFORD, G. S. Pure Starch Powder TEXT 264 MURRAY, SIR JAMES Fluid Magnesia, Fluid Camphor xiv

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W	WINK, J. A., & CO. Morphia and all it. Sa. 1 WOODS, M. W. Aerea Tooth Paste 22 WRIGHT, LAYMAN & UMNEY Wholesale and Export Druggists, Essential Oil of Almonds xix and COVER WYLES & CO. Coated Pills, Pharmaceutical, Wholesale Druggists xv
Y	YATES, W. S. Shop Fitter 18 YOUNG, H. (G. PATTISON, Proprietor) Corns vii YOUNGER & RIDLEY Temperance Wine Mixtures 18

CLASSIFIED LIST OF ALL ADVERTISERS

Whose Announcements appear in "THE CHEMIST AND DRUGGIST." Those whose Names do not appear above are published in one of the other issues of this month.

AERATED AND MINERAL WTS AND PLANT

[See SYPHONS and ESSENCES.]
Apollinaris (Hunyadi Friedrich-hall, and Apollinaris)
Barnett and Foster
Bratby and Hinchcliffe
Bredt's, Lim.
British Syphon Co.
Bush, W. J., and Co. (Foam Producer, &c.)
Chemists' Aerated Waters Association
Ellis (Ruthin)
Favarger, H.
Gallais, E. (Min.)
Guere Freres
Harrison, W. B.
Hassall and Co. (Citric Acid, Phospho)

Aerated & Mineral Wts & Plant—cont.

Idris and Co.
Ingram and Royle (Mineral and Vichy)
Jewsbury and Brown
La Bourboule
Macdowcroft, W.
Melin, C.
Mills and Co. (Bourne)
Munby, Chas., and Co.
Rylands, Dan
Schacht, W., and Co. (Kronenquelle)
Schweyre and Co.
Taylor, F., and F. J.
Tyer, Hayward, and Co.
Vallet, L. (Bottles)
Wilcocks, N. G. ("Victory")
Younger and Ridley (Temperance Wines)

ACETIC ACID

Dunn and Co.

ALKALOIDS

Howards and Sons (Cinchona)
Smith, J. and H.

AMMONIA

May and Baker

APPARATUS

Cetti, E. (Meteorological)
Cubley and Preston (Nitrometers)
Follows and Bate, Lim.
May, Roberts (Water-bath)
Morgan Crucible Co.
Orme (Scientific)
Pat. Plumbago Co. Co.
Rothermel, Paul (Vinegar)
Wolters, Otto (Balances)

AGENCIES ABROAD

Campbell, Neil S. (Colombo)
Cocking (Japan)
Davison, A.
Eisner and Mendelson (Philadelphia)
Evans, Sons and Mason (Canada)
Fulton (Melbourne)
Fougers (New York)
Hornusjee Ruttonjee (Bombay)
Kempthorne (N.W. Zealand)
Lennon (Port Elizabeth)
Phillips and Co. (Bombay)
Prosser, E., and Co. (Sydney)
Reed, F., and Co. (Natal)
Roberts (Paris, &c.)
Roeke (Melbourne)
Sharland & Co. (Auckland N.Z.)
Shirreffs and Co. (Alibabad)
Symes and Co. (Simla)

BANDAGES

Bailey and Son
Bole Hall Mill Co.
Gibbs, Cuxson, and Co.
Hutchinson, A., and Co. ("Heft-Liverpool Lint Co. band")
Robinson and Sons
Seabury and Johnson

BANK

Birkbeck Bank

BEDS, WATER

Hutchinson, A., and Co. (Sheeting Rubber)
Pocock Bros.
Hooper & Co.

BEE SWAX & HONEY

Kemp, W., and Son

BICARB. SODA

Brunner, Mond and Co.
Gaskell, Deacon and Co.
Howard, and Sons
May and Baker

BISMUTH PREP.

Howard and Sons
May and Baker

BOOKS

Dohell, Dr. (Bournemouth)
James, Dr. Frosser (Guide to
New B.P.)
Kimpton (Discount)
Smith, J. G. ("Aertd Wtrs")
The Physician's Pharmacopœia

BOTTLES

Aire and Calder
Barnett and Foster (the
"Eclipse" Stoppered)
Breflitz, Lim.
Brooks, Peel (Perfumers)
De Luca, G. V.
Hearn, Riddle
Isaacs, I., and Co.
Kilner Bros.
Lang, Jonas and Jules
Potts
Rylands, Dan
Simeock, T.
Simeock, W.
Thompson, Millard and Co.
Toogood (Feeding)
Vallet
York Glass Co., Lim.

BOXES

Arundel (Folding Card)
Austin and Co. (Cardboard)
Ayrton and Saunders
Banks & Ratcliffe (Soaps, &c.)
Bethell, Thomas P. (Folding)
Bremer, Aug. (Cardboard
Folding)
Estes' Turned Wood
Metz, Paul (Fine and Willow)
Noakes, B., and Co.
Patent Safety Sample
Robinson and Sons (Cardboard)
Self-Opening Tin Box Co.
Thompson Norris Manufg. Co.

BROKERS' DRUG

Morrison, R., and Co.

BRUSHES

Ashworth (Metallic)
Coudrou, R. (Flesh)
Dykes and Co.
Gérard, A. (Toilet)
Lynch and Co. (Electric)
Titterton and Howard

**BUTTER COLOUR,
&c.**

Bush, W., Son, and Co. (Mari-
goldine)
Meyer and Heuckel
Oldfield, Pattison & Co.

CAMPFOL

Howard and Sons
Keene and Ashwell (Homœo-
pathic)
May & Baker
Murray, Sir James (Fluid)

CAPSULES

Betts and Co. (Metallic)
Chevallier (Solubles)
Denoual, J. (Medicinal)

CATALOGUES

Bourne, Johnson, and Latimer
Newbery and Sons
Quarterly Price Current (Maw's)

CEMENT

Foulkes
Kay (Coaguine)

CHALK PRECIP.

Dunn and Co.
Levermore and Co.

CHEMICALS

Bernstein Vogt (Fine)
Bramwell, E., and Son
Brunner, Mond & Co. (Bicar-
bonate of Soda)
Bush, W., and Co.
Dunn and Co.
Gaskell, Deacon and Co. (Bi-
carbonate of Soda)
Howard and Sons (Pharma-
ceutical)
May and Baker
Smith, T. and H.
Sutton and Co. (Volumetric
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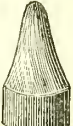




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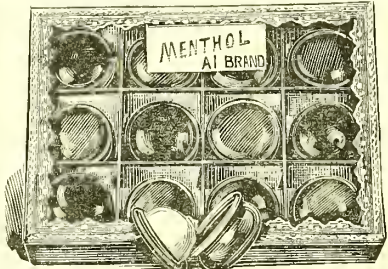
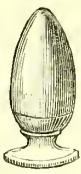
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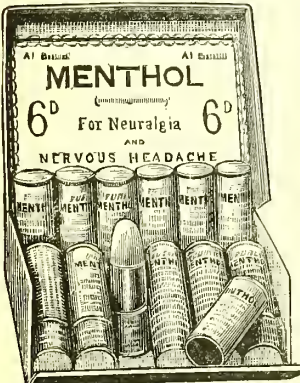
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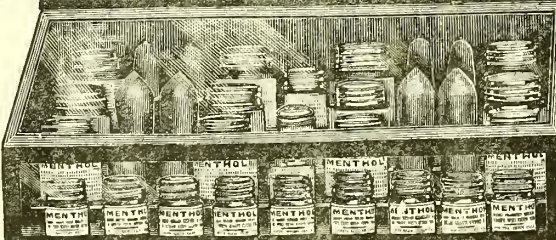
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We have now received very careful analyses of more than ten thousand prescriptions dispensed in all parts of the United Kingdom, all within the first three months of this year. To the gentlemen who have so generously spared the time and trouble to make this collection of material for us we offer our sincere thanks. We believe the statistics will present many features of interest, and these shall be compiled as rapidly as possible. We do not ask for any more such analyses to be undertaken at present, but we hope any friends who have commenced the task will complete it and send us their results in the course of a few days, as we shall include in our report all that come to hand during next week.

**

It will be seen from a circular issued by a section of the Scotch members of the Pharmaceutical Society that the bitter feeling which has been created in the North by the action of the Council in reference to Scotch affairs is to find constitutional expression at the next Council election. No one can complain of this action; it is the proper method of manifesting discontent or opposition; and we judge that the individuals against whose conduct the movement is mainly directed will heartily welcome this indication of interest in the affairs of the Society.

It appears that some advertising firm is proposing a blessing to this country of the most lavish character. On Monday evening last in the House of Commons Mr. Kelly asked the Secretary to the Treasury whether, if a company were prepared to pay the Government their full price for penny stamps, and if they, without fraud, were prepared to resell them to the public through stationers who hold licences to sell stamps, at halfpenny each, the Government would interfere with the said stationers selling the same. Mr. H. Fowler, in reply, said the proposal in question was under the consideration of the Commissioners of Inland Revenue; but no decision had been arrived at as to whether the scheme should be sanctioned or not.

**

A "Homœopathic League" is being organised, evidently on the lines of the Primrose League, with which the country generally is by this time familiar. The announcement of this new scheme is signed by Drs. R. E. Dudgeon, M. Roth, D. Dyce Brown, H. Harris, and John H. Clarke, and sets forth substantially that the practitioners of homœopathy, wearied with the persecution and ostracism to which they are subject from the medical profession, now appeal to the intelligence of the public. The League is to produce and distribute literature, and by this means, by lectures, and by public meetings, is to make known the advantages of homœopathic treatment. Not only medical men and chemists, but all believers and sympathisers are invited to join. Ladies are eligible, and the subscription is 2s. 6d. a year. Those who desire further information can get it from Dr. John H. Clarke, 15 St. George's Terrace, Gloucester Road, South Kensington.

**

THE CEREMONY.—Thus remarks the *Lancet* in concluding an account of the "opening (*sic*) of the new Medical Examination Hall by the Queen":—"Seldom, if ever, has Her Majesty's appearance in public been more auspicious, and rarely has she performed a more gracious act, and one which we are sure will endear her more to the hearts of an appreciative people." Contrast this with the last paragraph of an article on "the curiously fantastic and parti-coloured spectacle" in the *British Medical Journal*, which says—"The omens of the future are bright, and the ceremony of this week, although it had by no means the fundamental importance which many might superficially be disposed to attach to it, is one of not the least promising pledges of future medical reform." THE CHEMIST AND DRUGGIST's interpretation of the ceremony was given four days before it took place. It was this (before p. 187):—"The Royal College of Surgeons of England received, during the past financial year, over 20,000, as fees from candidates, whilst nearly 10,000, was paid to examiners." Double this profit, subtract 25 per cent. or so for working expenses, and the true meaning of the ceremony is got.

**

Mr. H. Fowler, replying to a question in the House of Commons, says on behalf of the Post Office that the "fee now charged for registering telegraph abbreviated addresses does not cover the cost to the Department and the loss of revenue by the curtailment of the address." The fee charged for the registration is one guinea per annum. In London alone there are probably 10,000 addresses registered. We presume these are kept in alphabetical order; if so, very moderately-priced labour should suffice to put the message into the proper envelopes. Where can the loss come in? But Mr. Fowler says, "since the introduction of the 6d. tariff the practice of registering addresses has so enormously increased, and the departmental difficulties which have arisen have been so great, that it is a question with the Postmaster-General whether, after a certain date, it would not be well to abolish the use of abbreviated addresses, at all events for inland messages; and he cannot therefore lessen the present charge." The Post Office authorities will be expected to explain their departmental difficulties with a little detail before they are allowed to abolish this convenience to the commercial world.

DIARY FOR NEXT WEEK.

Monday, April 5.—Society of Chemical Industry, special meeting in the lecture theatre, Central Institution of the City and Guilds of London Institute, Exhibition Road, South Kensington. Professor Unwin, M.I.C.E., will lecture on "The Principles and Methods of Testing Cementing Materials."

Tuesday, April 6.—Institute of Civil Engineers, at 8, "Water Purification; its Biological and Chemical Basis." By Dr. Percy F. Frankland, F.C.S. Ballot for members.

Royal Institution, at 3, "The Functions of Circulation." Professor Arthur Gamgee.

Wednesday, April 7.—Pharmaceutical Council, 17 Bloomsbury Square, at 11 A.M.

Midland Counties Chemists' Association, Grand Hotel, Birmingham; paper on "Milk Analysis," by Mr. George E. Perry.

Society of Arts, at 8, "Preparation of Drawings for Photographic Reproduction." J. S. Hudson.

Thursday, April 8.—Society of Arts at 8, "Asbestos and its Applications." James Boyd.

Royal Institution, at 3, "Electro-Chemistry." Professor Dewar, F.R.S.

Friday, April 9.—Edinburgh Chemists' Assistants' and Apprentices' Association Conversazione in Literary Institute, at Edinburgh; exhibition at 9; musical entertainment at 10; and dancing at 11.

PUBLIC SALES FOR NEXT WEEK.

Drysalteries, April 6, at 1 P.M., at Commercial Sale Rooms; bark, April 6, at 1 P.M., at 6 Mining Lane; spices, April 7, at 11.45 A.M. at Commercial Sale Rooms; gums, April 8, at 11.30 A.M., Commercial Sale Rooms.

Scientific Notes:

On Chemistry, Pharmacy, Botany, Materia Medica, &c., Original, Selected, and Translated.

THE principal use of glycerine in calico dyeworks is to dissolve arsenious acid. Good glycerine should dissolve 6 lbs. of arsenic to the gallon.

OLEINE, used by dyers, is a compound of sulpho-ricinoleic acid with soda, potash, and ammonia, and contains about 50 per cent. of fatty acids.

DETECTION OF METALS IN DRINKING WATER.

MR. A. J. COOPER (*Journ. Soc. C. I.*, February) has ascertained the comparative delicacy of various tests for the detection of the following metals in drinking water. His results are given in the appended table:—

Metal	Reagent	Depth of Liquid, 3½ inches.	Depth of Liquid, 14½ inches. Cylinder one used in opaque tube.
		1 part of metal detected in—	1 part of metal detected in—
Copper ..	K ₂ FeCy ₆	4,000,000 of water	11,750,000 of water
" ..	NH ₄ HO	1,000,000 " "	1,950,000 " "
" ..	H ₂ S	4,150,000 " "	15,660,000 " "
Zinc ..	NH ₄ HS	2,500,000 " "	" "
Arsenic ..	SH ₂	3,600,000 " "	7,520,000 " "
Lead ..	K ₂ CrO ₄	4,000,000 " "	5,875,000 " "
" ..	SH ₂	100,000,000 " "	196,000,000 " "

BORIC ACID AS A PRESERVATIVE.

IN a paper "On some Antiseptics for Food Preservation," by Messrs. Sulman and Berry, communicated to the Chemical and Physical Society (*Univ. Coll., Lond.*), the authors state that *Aseptin*, *Glacialine*, and *Boroglyceride* own their antiseptic properties almost entirely to the ratio of contained free boric acid. *Boroglyceride* they ascertained to consist

of 25 per cent. of the ether C₃H₇BO₃ and 75 per cent. of glycerine and free boric acid in equal proportions. They deprecate the use of boric acid or preparations of it for food preservation, especially of milk, on account of the great risk to children and infants.

[Is it proved that boric acid is physiologically injurious? It is largely used for milk preservation, yet we have not heard of bad effects.—ED. C. & D.]

A NEW BOXWOOD.

MR. JACKSON, curator of the Kew Museums, announces (*Journ. Soc. Arts*, March 19), the discovery in South Africa of a new boxwood. He recently received samples from a correspondent, and on comparison with the Cape box (*Celastrus burifolius*, L.), he found that they did not agree, and that the new variety nearly resembled *Bucius sempercivens*. This boxwood is not so well adapted for engraving as the ordinary kind. The result of examination at Kew proves the wood to be derived from a new species of *Bucius*, and it has been named by Professor Oliver *Bucius Macowanii*, in honour of Mr. P. Macowan, Director of the Botanic Garden, Cape of Good Hope.

NEW REACTIONS OF HYDRASTINE.

HYDRASTINE is a colourless alkaloid obtained from *Hydrastis Canadensis* (Golden Seal), and is considered to be the active constituent of the drug, though this is doubtful. Dr. A. B. Lyons (*Drug. Circ.* p. 59) reviews the reactions of the alkaloid, and gives the following as new and reliable tests:—

(1) Pure hydrastrine dissolves in pure sulphuric acid to a solution which has a very faint tinge of yellow. If the solution be heated its colour changes to a deep blue purple. If the sulphuric acid contains a trace of nitric acid it produces a yellow solution. If the nitric acid be present in the proportion of 1 : 1,000 the colour of the solution will be orange-red. If the nitric acid be in larger proportion the solution will be first orange, then pale red.

(2) Pure nitric acid produces an orange solution, the colour produced being quite permanent. On adding water there remains an insoluble residue, and the solution is found to have an intense blue fluorescence.

(3) The action of oxidising agents is particularly interesting. If the alkaloid is dissolved in concentrated sulphuric acid and a little binoxide of manganese added, there is developed first an orange colour, which deepens to a rich cherry-red, which passes through carmine to a yellowish shade of red, and then, after some time, as the acid absorbs moisture perhaps, changes rather suddenly to a pale orange yellow. The reaction is highly characteristic, and especially interesting in contrast with the behaviour towards the same reagents of berberine, which again strikingly simulates that of strychnine.

(4) With sulphuric acid and barium iodate (or iodic acid) an orange colour passing rapidly into crimson, blood-red, and fades into dull orange.

(5) Sulphomolybdic acid produces with hydrastrine a sage-green colour, slowly changing to a brownish, and then gradually fading—a highly characteristic reaction.

(6) The most striking reaction is that of solutions of hydrastrine with potassium permanganate. If to the solution of hydrastrine there is added a little dilute sulphuric acid, and then a few drops of a dilute solution of potassium permanganate (decinormal), the colour of the permanganate solution is instantly discharged, and there is developed in the solution an intense blue fluorescence. A single drop of a one per cent. solution of hydrastrine is capable of rendering strongly fluorescent in this way a large test-tube full of fluid.

The fluorescent principle here formed differs from *Esculine* in being insoluble in chloroform.

If potassium permanganate is added in excess the alkaloid is completely destroyed, and the fluorescent principle itself is further oxidised so that the fluorescence disappears.

This fluorescence is not afforded by solutions of hydrastrine hydrochloride, as has been stated by Husemann, and Dr. Lyons is of opinion that golden seal does not contain a primary fluorescent principle.

Metropolitan Reports.

AT Wandsworth Police Court on March 26 Mr. Paget proceeded with the charge against Alice Amelia Tharby, for attempting to poison Mrs. Rose Hannah Darling, a widow, by placing some tincture of opium and chloroform in her tea and milk. The circumstances of the case have been reported. After evidence by the prisoner's fellow-servant and others, Mr. Paget committed the prisoner for trial, and accepted bail for her appearance.

At Marlborough Street Police Court, on March 25, George Parker, chemist, residing in Wardour Street, was charged with assaulting a solicitor named William Coxwell. From the evidence it appeared that the prosecutor, a Mr. Hopkins, and another gentleman, as representing the estate of a testator named Boor, went to the prisoner's shop for the purpose of taking formal possession. The prisoner threatened that if they did not leave he would turn them out. They remonstrated with him, but he forcibly ejected them, and when in the street struck Mr. Coxwell twice. In his defence the accused said that the prosecutor had no right to be on the premises, and that he only used sufficient force to eject him and those who were with him. The matter in dispute was still pending. If he struck Mr. Coxwell it was by accident during the scuffle. Mr. Mansfield inflicted a fine of 5*l.*, with the alternative of one month's imprisonment.

ILLEGAL STORAGE OF BENZOLINE.—On Friday, March 26, Dr. G. Danford Thomas held an inquiry at the St. Pancras Coroner's Court touching the death of James Keenes, aged 16, in the employ of Mrs. Hutchins, a dyer and cleaner, of 4 Belsize Park Terrace. Mrs. Hutchins deposed that the deceased had been cleaning gloves with benzoline. At the time there was a small gas-stove lighted on the table, and whilst holding the gloves up on a stick he was suddenly enveloped in flames, and was dreadfully burned about the arms and body, and died in the North-Western Hospital two days after. In examination it came out that Mrs. Hutchins kept on her premises without a licence as much as five gallons of benzoline, adding that she did not know it was illegal. Mr. Spencer, who appeared for the Metropolitan Board of Works, said that the spirit used by Mrs. Hutchins was what was known in the trade as "naphtha," and was highly inflammable. If there were any light near, the vapour would run along for 25 feet, and the Act prohibited any light being brought within 20 feet of any building containing it. The Act of 1871 declared that no more than three gallons should be kept in one place, and that in a vessel. No doubt Mrs. Hutchins had been guilty of a breach of the law. After hearing further evidence the jury returned a verdict that death had resulted from exhaustion and pneumonia, following burns from accidental causes, but added—"The jurors would call the attention of those using benzoline and other similar spirits to the provisions of the Petroleum Acts, and to the cautions and regulations in connection with them, as issued by the Metropolitan Board of Works."

Dr. G. Danford Thomas, Coroner for Central Middlesex, held an inquest on Wednesday, at the Eyre Arms Hotel, Finchley Road, St. John's Wood, concerning the death of Alfred Herbert Hackney, forty years of age, a doctor of medicine, who resided at 9 Acacia Road, St. John's Wood. The brother-in-law of the deceased, Dr. R. T. Warne, 37 Highgate Road, said about a month ago, when he last saw Dr. Hackney alive, he complained of suffering from neuralgia, to severe attacks of which he was periodically subject. In order to relieve the pain he was in the habit of sniffing chloroform, the danger of which practice witness pointed out to him. On Sunday at midnight witness was informed of the deceased's death. He had never in the witness's hearing threatened to destroy himself. He was a widower and had left five young children. Elizabeth Miller, the deceased's domestic servant, deposed that on Friday, Saturday, and Sunday her master kept to his bed, as he had one of his recurring neuralgic attacks. On Sunday forenoon, about 11, when the witness last saw him alive, he said, "My head is so bad I hardly know how to bear myself." Afterwards she found a paper fixed outside his bedroom door upon which he had written, "Do not disturb me until I ring," his habit when he did not wish to be disturbed. Shortly before midnight she became alarmed,

burst open the door, and discovered the deceased lying dead in bed, and a bottle containing chloroform beside him, as though it had slipped from his hand. Dr. Frederick Watts, of Fortress Road, Kentish Town, stated that he was fetched to see the deceased about midnight on Sunday, but on his arrival he had evidently been dead two hours. The jury returned a verdict of "Death from misadventure."

Provincial Reports.

BARNSTAPLE.

A BULL IN A CHEMIST'S SHOP.—Some consternation and considerable amusement were occasioned on Tuesday last in the neighbourhood of the Square, Barnstaple, by the visit of a fat bullock to the shop of Mr. J. J. Tremeeer, chemist. The animal was being driven to the slaughterhouse by a man, when something appears to have startled it, and the bull then marched straight into Mr. Tremeeer's shop. With his widespread horns he cleared a table of sample bottles of perfumes and other articles, and then passed through a comparatively narrow gangway dividing two counters, and turned the corner behind the dispensing counter, at the end of which Mr. Tremeeer was standing writing, and seeing this strange customer with his eye on him, Mr. Tremeeer, being in a *cul de sac*, thought it prudent to leap over the counter with unusual agility. The bullock thereupon shook himself, and down tumbled an array of valuable vases and show-bottles, each of the value of about 30*s.* With his horns he literally lifted the counter, and further damage ensued. The animal, apparently satisfied with the damage done, then "backed" through a doorway, first of all forcing open the door, and landed himself in the back court. After being allowed to remain there for about half an hour, the bullock was induced to walk off the premises by the side door. The entire freak of the bullock will probably cost the owner between 15*l.* and 20*l.*

BRADFORD.

DR. EDUARD BRONNER, who died here recently, was one of the most respected members of the German community, and had lived in England for upwards of 30 years. In his capacity of medical man, Dr. Bronner became a benefactor to the poorer classes of the town and of the surrounding districts in connection with the Eye and Ear Hospital, where for many years he gave his services gratuitously. In 1856 Dr. Bronner translated Professor Moleschott's "Chemistry of Food and Diet" into English. He was a Heidelberg student, and his connection with the revolutionary party there necessitated his departure from Baden when that party was overthrown.

LIVERPOOL.

EPSOM SALTS AND PERITONITIS.—On Tuesday last Mr. C. S. Samuelli, deputy city coroner, held an inquest on the body of Francis Martin (32), a dock labourer. While suffering from toothache the deceased, on the previous Thursday night, took an ounce of Epsom salts, after which he was seized with a fit of severe vomiting, and felt cramping pains in his stomach. He died the same night, although a doctor was called in. Dr. Kellett Smith, physician, said he had made a post-mortem examination of the deceased, and he found that death was due to peritonitis, or acute inflammation of the lining membrane of the bowels. In some cases it might be the result of the person taking a cold. The present case was, however, perfectly natural, and the salts had not been the cause of death. The jury returned a verdict that deceased died from "Natural causes."

CARBOLIC ACID POISONING.—On March 24, Mr. C. S. Samuelli, deputy coroner, held an inquest on Emma Hancock, a young woman of nineteen, who had committed suicide by taking carbolie acid. A bottle labelled "Carbolie acid—poison," was found in the ashpit, and from inquiries by the police it was found that a neighbouring chemist had supplied an ounce to the young woman, who said she wanted to put

it down a drain to prevent bad smells. The doctor found that the cause of death was asphyxia, caused by taking carbolic acid.

The deputy coroner, in addressing the jury, called attention to the fact that there seemed to be no restriction on chemists as to the sale of carbolic acid, which was a very deadly poison. They seemed to supply it to anyone who asked for it on any pretext about using it for bad smells and the like, with no other precaution than labelling it "Carbolic acid—poison"; while it was very difficult to obtain arsenic, and other poisons, such as opium. Believing that there should be a restriction on chemists selling this poison—two drachms of which killed almost on the instant—he thought the attention of the authorities should be called to it.

Dr. Oldershaw informed the deputy coroner that there was at present before the House of Commons an amendment on the Act bearing upon the question, and probably what the deputy coroner had said would help very much in getting it included in the first schedule of poisons. At present it was only included among the second.

The jury, who concurred in the remarks of the deputy coroner, found a verdict of "Suicide by poison while in a state of temporary insanity."

LUTON.

A SINGULAR INQUEST.—Under the title "A Singular Death" a local paper reports an inquest held here on March 20 on William Stammers (51), a jobbing gardener, who had died on the previous Thursday night. The widow said that on Thursday her husband came home about 1 o'clock after being at a sale, and remarked that he felt very queer; he thought he had got "a touch of the bile." He had dinner and went out, but returned about 3, and said he felt ill, as if there was a lump in his chest. By her advice he took a "Studd's" pill, which she had in the house, and she also went to Mr. Toyer's shop and bought threepence worth of tincture of rhubarb. He swallowed this, and afterwards vomited. As he complained of feeling cold, witness made a large fire, and deceased went to bed about 4 o'clock. His arms seemed to be also affected. He afterwards rose and had some tea, but went back to bed. When witness went up to the bedroom about half-past 7 with her boy she saw him, but did not speak because he was asleep. She again went upstairs shortly before 11 o'clock preparatory to retiring for the night, and he was then lying the same as before; but though she called to him repeatedly and shook him, she could get no answer. She called in a neighbour, and it was discovered that he was dead. Dr. Sworder was sent for, and came, but could do nothing. Her husband had been a healthy man, and had not complained of anything before this. The pills referred to she had bought on the previous Saturday—four for a penny. Her husband took one that night, and she and her little boy each took one on Sunday morning. Mr. A. Toyer, drysalter and patent medicine vendor, spoke to selling a quantity of tincture of rhubarb to Mrs. Stammers. Dr. Sworder said he was called to see the deceased. He found him dead, lying in bed on the right side. The left upper and lower extremities were rigid, but the limbs on the right side were quite flaccid. On the lips and right side of the tongue there were some discolorations, as if they had been bitten. There were no marks of injury, and he found no bottles in the house. Without holding a post-mortem examination he thought there had been some mischief on the brain, which caused the rigidity in the left limbs. The Coroner said it was probable the man had died from brain disease. The jury had no difficulty in arriving at their verdict, which was to the effect that the deceased had died of brain disease.

MANCHESTER.

SINGULAR CASES OF OPIUM POISONING.—CHARGE OF MANSLAUGHTER AGAINST A DOCTOR.

AN adjourned inquiry was held before the deputy city coroner, Mr. S. Smelt, on Tuesday, into two cases of death from opium poisoning. The first case related to a woman named Annie Darling, aged 40, wife of a labourer, of 91 Kendal Street, Wilson Street, Bradford. This woman died after taking some medicine made up for her by Mr. J. W. Irvine, surgeon,

assistant to Dr. W. Pitman, of Ashton New Road, Manchester. On her death symptoms of opium poisoning were noticed. From the evidence it appeared that Mrs. Darling complained to her husband of a severe cold, and, becoming worse, on Wednesday, March 17, she went to the surgery of Dr. Pitman. Here she saw Mr. Irvine, and he made up a bottle of medicine for her. She had taken three doses of this, and had felt excessively sleepy after each. She took another dose before going to bed, and then fell into a deep sleep. Early on the following morning her husband tried to wake her, but being unable to do so he sent for Dr. Bailey, of Ashton Old Road. The assistant came and tried, but failed to arouse Mrs. Darling. He examined the medicine, and immediately sent for Dr. Pitman. Both Dr. Bailey and Dr. Pitman came, and every means to bring back the deceased to consciousness was tried, but in vain, and she died about a quarter-past eight in the morning. At the previous inquest Dr. Bailey and Dr. Pitman expressed the opinion that the woman had died from the effects of opium. Mr. Irvine said he had only put two drachms of the drug in the medicine. Mr. W. Thomson, analytical chemist, said he had made an analysis of the contents of the bottle supplied by Mr. Irvine to the deceased. He found that it contained 1.729 grain of hydrochlorate of morphia to the fluid ounce. Mr. Irvine had said he only put two drachms of opium in the medicine, but the amount he (Mr. Thomson) found would be equivalent to somewhere about four drachms of ordinary laudanum to the fluid ounce, so that in the six ounces of medicine given by Mr. Irvine three ounces would be laudanum. Dr. Bailey said the dose of laudanum recommended by the British Pharmacopoeia was from 10 to 40 minims. When he used the drug he gave from 10 to 15 minims as a dose. A dose of 20 minims repeated every two hours he considered to be dangerous. If Mrs. Darling took two tablespoonfuls of the mixture, and it contained the quantity of morphia stated by Mr. Thomson, she would each time take about 240 minims. Mr. Irvine, who attended the inquiry, maintained his statement that he had given no more than two drachms of opium. Mr. Smelt, in summing up, said there could be no doubt at all that the woman had died from opium poisoning. Mr. Thomson had analysed the medicine, and he stated that it contained twelve times the amount of morphia it was supposed to contain. The question was how it got there. It was for them to say whether Mr. Irvine had made a mistake in mixing the medicine. If they thought he had, then it was also for them to say whether it was a mistake due to gross negligence. A further question would then arise, whether that gross negligence was not criminal negligence. The jury, after a long consultation, returned a verdict to the effect that Mrs. Darling died from opium poisoning, the opium having been administered owing to the gross negligence of Mr. Irvine. They did not, however, think Mr. Irvine ought to be sent for trial on a charge of manslaughter.

The second inquiry related to the death of a child named Angelo Uglow, aged five months, son of a scissors-grinder. In this case the child was taken by its mother to Dr. Pitman's on the same day that Mrs. Darling went to the surgery. She saw Mr. Irvine and gave him a history of the child's case. He gave her a bottle of medicine and two powders. She gave the child several doses of the medicine, and from the time she gave it the first dose to the time of its death it was in a heavy sleep. The child died on Saturday, the 13th inst. Previous to death it was seen by Dr. Thomas, and he stated that the child was suffering from opium poisoning, and would certainly die. An inquest was held on the 15th inst., and Mr. Irvine then denied that he had used morphia or opium in making up the medicine he prescribed for the child. In this statement he was to some extent corroborated by Dr. Pitman, who said he had had no morphia in his surgery for some time previous to the day on which the medicine was made up. The jury on that day were desirous of returning an open verdict, but in the end decided to take the same course as that which the jury in Mrs. Darling's case had taken.—Mr. Thomson, in his evidence on Wednesday, said he had analysed the medicine, and found that it contained equivalent to 3.135 grains of the hydrochlorate of morphia per fluid ounce of the mixture. In each teaspoonful there would be about one-third of a grain of morphia.—Mr. Harris, pathological registrar at the Infirmary, who had made a post-mortem examination in this case, said he would not give hydrochlorate of morphia to a child five months old,

and he considered a third of a grain of morphia a dangerous dose.—Mr. Smelt remarked that the child had undoubtedly died from the effects of opium. The question was whether it was administered from the bottle given to Mrs. Uglov by Mr. Irvine. If they were satisfied that the child died from opium poisoning, then they must ask themselves whether the opium was contained in the medicine given by Mr. Irvine. It had been stated by Mr. Irvine that he did not use morphia in making up that particular bottle of medicine, but Mr. Thomson had stated the medicine contained a considerable quantity of morphia. They must ask themselves how that morphia got there. Did they think it was by a mistake of Mr. Irvine's, or did they think it had been put there by somebody else? If they thought it had got there by mistake, then they must ask themselves if that mistake was criminal.—After a consultation, the foreman of the jury said they considered the deceased had died from poison contained in the mixture supplied by Mr. Irvine knowingly, but in ignorance of the consequences.

The Deputy Coroner: Do you say that it has been owing to the negligence of Mr. Irvine or not?

The Foreman: We say knowingly, but in ignorance of what the consequences would be.

The Deputy Coroner: That amounts to a verdict of murder. What I would ask you to do is this: Consider your verdict very carefully, and then say whether death has resulted from opium poisoning or not.

The Foreman: Decidedly.

The Deputy Coroner: That being so, is it owing to the gross negligence of Mr. Irvine or not; or, if you go farther, and say that he wilfully administered it, it is a verdict of wilful murder: because I must tell you this—if Mr. Irvine has given the poisonous dose of medicine knowing that it was a poisonous dose, and that the medicine was given by his direction to a child, he must have intended its death. If you think he intended the child to have a poison, and a poison which would cause death, it is murder. If you think he has given it in a grossly negligent manner, then it is for you to say whether or not it is manslaughter. Will you say whether you think it is murder, manslaughter, or gross negligence.

The Foreman: We are unanimous about the gross negligence, but there are one or two jurymen who are rather "squeamish" about saying it is manslaughter. We are for gross neglect.

The Deputy Coroner: Is it such gross negligence as amounts to manslaughter?

The jury, after consulting, found that Mr. Irvine was guilty of manslaughter, and on the Coroner's warrant he was committed for trial.

On Thursday, at the city police court, Mr. J. W. Irvine, surgeon, was charged with having caused the death of the child Angelo Uglov. The evidence having been repeated in full, the Stipendiary said he did not think it was sufficiently clear that the child died from opium.—Dr. Thos. Harris, who made a post-mortem examination of the body, and who stated in his evidence that there was inflammation in both lungs sufficient to cause death, said, in reply to Mr. Headlam, that he could not say the child died from opium.—The Stipendiary: Then, unless you can say so, I am afraid we cannot go on with the case.—Dr. Harris: From a post-mortem examination nobody could tell. Appearances were consistent with death from opium poisoning, but the condition of the lungs was quite sufficient in itself to cause death.—The Stipendiary, addressing Mr. Irvine, said he did not think it was any use sending the case to a jury. Mr. Irvine would be discharged.

NORTHAMPTON.

COMPETITION.—The druggists of this town seem to have entered vigorously into the popular strife. In a *Daily Reporter* which has been sent us, we find advertisements from Messrs. Ashford, J. H. Blunt & Son, and Philadelphus Jeyes & Co., all pressing reduced prices for medicines on the attention of the public. No other class of tradesmen is showing this sort of energy.

PETERBOROUGH.

A FEW weeks ago two children, aged fifteen months and six years respectively, son and daughter of John Howard, a horsekeeper, died under suspicious circumstances. At the

same time the mother and another child were seized with illness. It was supposed that the deaths and illness were due to a pudding made from wheaten flour which, it was thought, may have become mixed with corn which had been dressed with sulphate of copper and carbolic acid. At the inquest the medical testimony pointed to such a conclusion, and the contents of the infant's stomach were analysed by order of the Home Office. At the adjourned inquest, Dr. Thomas Stevenson, of Guy's Hospital, stated that as a result of his analysis of the contents of the stomach, and of some of the flour which had been used, he found no irritant or metallic poison or any substance which might cause death. Upon this testimony the jury returned a verdict of accidental death, caused by irritant poisoning, but how taken, or what poison, there was no evidence to show.

SHEFFIELD AND DISTRICT.

(*Special Correspondence.*)

MR. THOMAS DOBB, Ph.C., has been elected honorary secretary to the Sheffield Naturalists' Society.

Mr. Morrison, pharmaceutical chemist, West Street, has been appointed Demonstrator in Practical Chemistry to the Sheffield School of Pharmacy in place of Mr. Smith.

Mr. Wm. Ward and Mr. J. M. Furness have been appointed to supply drugs, &c. to the Ecclesall Union for the ensuing six months. Mr. Graham, Westbar, has got the contract for three months to supply the Sheffield Union.

Some people are very fond of mystifying initials. Various titles more or less comprehensible are assumed by many in our fraternity. Can any of your readers interpret the ominous symbol or equation M.R.P.S.G.B.? It appears daily in an advertisement which signifies that the owner is an agricultural chemist and dentist, who deals in a miscellaneous assortment of stock.

One of our physicians has lately been visiting "his friends the chemists," soliciting them to recommend patients to him. In return he very generously arranges not to require any participation in "his friends'" profits, but will advise all patients to take their prescriptions to be dispensed at the chemist's who recommended. It scarcely needs the doctor's assurances that it is the bad times which have induced him to reduce his fees and display unusual activity in seeking customers.

SERVE THEM RIGHT.—Owners of proprietary preparations of any value do not always improve their position by allowing their goods to get into the hands of "cutters." Here is a case in which a chemist of good connection had been appointed sole agent for a certain 6s. article. By dint of judicious display and advertisement he was able to purchase 100% worth of the goods at a time. Hearing that the article was being supplied and undersold by a cutting store near to him, he withdrew his advertisements and did not push the article. The result of so doing was that inquiries were made by the makers as to the cause of the diminished sale, which elicited the obvious reply. During the correspondence it was stated that the only order the firm had received from the store was for a *quarter of a dozen*.

The last published reports of the Sheffield Hospitals show that from 12 to 15 per cent. of the gross income of these institutions is spent in drugs. After butcher's meat and provisions, *physic* is the heaviest item. In two of the principal hospitals, which have a gross annual income of about 12,000%, the item for drugs, linseed-meal, and dispensers amounts to no less than 1,500%, while in the various smaller ones the amount of medicines gratuitously distributed is even more in proportion to their income. In addition to this, one of the two Unions in the borough provides the necessitous poor with medicines in sickness at a cost of upwards of 1,000% a year. It is well known that many of the recipients who are pauperised by this distribution of *Ol. jecoris*, *pulv. lini*, &c., purchased with money subscribed by a generous public, are well able to provide themselves with medicines. The Governors of these institutions would be able to extend their field of usefulness if they were only to supply medical and surgical aid. It is unnecessary to burden the subscribers and subject the institutions to imposition by providing medicines for their patients. It would give relief to a number of unemployed pharmacists if this and other evils which exist among us could be removed.

SCOTLAND.

ABERDEEN.

THE annual meeting of the Aberdeen and North of Scotland Chemists and Druggists' Society was held in the Society's rooms, 21 Bridge Street, Aberdeen, on Tuesday, March 16, Mr. David Ritchie, President, in the chair. There was a large attendance of members. The following office-bearers were appointed for the year:—Mr. James Sim, President; Councillor Gordon (of Sim & Co.), Vice-President; ex-Bailie Paterson, Treasurer, Mr. Alex. Strachan, Secretary; Dr. Presslie, Curator of Rooms; Mr. William S. Adamson, Librarian; Mr. Coutts, Convener of Price-list Committee; and Mr. Ritchie, Auditor. The question of homeopathic medicines being sold by patent medicine vendors was brought up, and the Committee (referred to in a previous report) was re-appointed to finish their investigation and report. The revised price-list was received and ordered to lie on the table till a special meeting be called to consider it. The financial statement showed that, though there had been an extra amount of expenditure last year in connection with the fitting-up of the rooms, there was a good balance on the right side, namely, about 15*l*. There was no other business of importance, and before the meeting broke up a very hearty vote of thanks was given to the retiring office-bearers.

Mr. J. Falconer King, F.C.S., has been re-appointed chemist to Turf and Garioch Analytical Association.

EDINBURGH.

Mr. R. L. Hendry, chemist, 33 Earl Grey Street, is removing to new premises at 27 Earl Grey Street.

Mr. Wm. Crow, chemist, 53 Nicolson Street, will shortly open a branch establishment at Tynecastle.

Sir Lyon Playfair has consented to become a candidate for the office of Lord Rector of the University at the approaching election.

The sequel to the recent bankruptcy of Mr. Gilbert Fairie, Bridge of Allan, is that Mr. Fairie has purchased the stock and fittings from the creditors, and will thus continue to carry on the business.

On Sunday, Alexander Young, residing at India Place, committed suicide by drinking a quantity of carbolic acid whilst left alone in the house. He was in bed and alive when his wife returned, but death ensued before medical assistance arrived.

The drug trade has the honour of being first in the field at the forthcoming International Exhibition in Edinburgh. The case of Messrs. Burgoyne, Burbidges, Cyriax, & Farries, Coleman Street, London, was erected and completed last week in the main buildings. All the "newest remedies" for ailments and chemicals are represented in this exhibit.

On Saturday last, William McLeod, a brass-finisher, was admitted to the Royal Infirmary suffering from poisoning. He stated that he had swallowed sixpence worth of laudanum. The stomach-pump was applied, and the usual means taken to restore animation, but the man died in the course of the evening. He had been out of employment for some time.

On Thursday, March 25, James Urr, a baker, of weak intellect, swallowed twopence worth of laudanum in consequence of some matrimonial troubles. He was treated at the Royal Infirmary, and was able to be removed in a short time. He was remitted to the parochial authorities as a lunatic, "but not dangerous," which under the circumstances may be presumed to mean that he is not daft enough to swallow a fatal dose.

EDINBURGH CHEMISTS' CONVERSATION.

UNDER the auspices of that lively organisation, the Edinburgh Chemists' Assistants' and Apprentices' Association, a conversazione is to be held on Friday evening, April 9, in the Literary Institute. As on previous occasions, there will be an exhibition of pharmaceutical, chemical, botanical, and other curiosities, an excellent concert, and at 11 o'clock a dance. Those who are within convenient distance of Edinburgh should make an effort to be present on Friday evening; they will get an evening's enjoyment and a memento thereof in the shape of an artistic programme, which

has been specially designed by Mr. Thomas Stephenson, assisted by Mr. Boyd. On the first page the chemist's assistant is shown in three phases: at noon, behind the counter; at night, in an alcove, *and not alone*; morning, he appears on the highway proceeding to the business of the day. On the last page some wit has been expended in a programme for Saturday morning. We give several extracts from this:—

2.0 A.M. DUET, "Oft in the stilly night" . . . *De Joy*
3.15 A.M. INHALATIO, "Nicotiana tabacum" . . *Wills*
3.30 A.M. FUGUE, "Hurriendo" . . . *Lacy Tryser*

(With expressions in D Major.)

9.15 to 11.30 A.M.

SYMPHONY . . "Potash and Repentance" . . *A. Topar*

GLASGOW.

The following amusing episode happened in a chemist's shop here one day last week:—

Enter GENTLEMAN CUSTOMER.

Gentleman Customer. Good morning! Will you let me have 2 drachms of chlorate of potash and 1 drachm of borax mixed together?

Chemist. With pleasure.

Gentleman Customer. How much?

Chemist. One penny, please.

Gentleman Customer (smiling). Oh, how cheap!

Chemist. Much obliged to you.

Gentleman Customer (suddenly). By-the-by, can you tell me what's the best thing for dissolving quinine in? I bought a bottle at —'s, but they could tell me nothing regarding it.

Chemist. You asked me for so much chlorate of potash and borax mixed together, for which I charged you a penny. You admit you got value for your money; that being so, I do not intend to supplement —'s ignorance.

Exit GENTLEMAN CUSTOMER, angrily.

A large and influential meeting of medical gentlemen resident in Glasgow and the West of Scotland was held here in the Faculty Hall, St. Vincent Street, on Friday last, to consider the question of inviting the British Medical Association to hold its annual meeting in Glasgow in 1888. It was moved by Professor Gairdner, and unanimously agreed to, that such an invitation should be sent. Professor G. H. B. McLeod moved that several public and all medical and scientific societies be requested to co-operate in the invitation. Dr. Dobbie, Ayr, moved that a guarantee fund of not less than 1,500*l*. be raised by subscription from the members of the profession and others to provide for the necessary expenses. A large and influential Committee was appointed to carry these resolutions into effect.

CHEMICAL SOCIETY.

A MEETING was held in the Society's Rooms, Burlington House, on Thursday evening, March 18, Dr. Hugo Müller, F.R.S., President, in the chair.

The following papers were read:—

"Note on the Combustion of Cyanogen." By Harold B. Dixon, M.A.

This had reference to the explosion of a mixture of cyanogen and oxygen by the electric spark. The state of the gases as regards dryness and the temperature of the spark determine the result, the greatest violence of explosion being attained with maxima of dryness and temperature. When a platinum wire is raised to redness in a well-dried mixture of carbonic oxide and oxygen, it glows intensely for a short time, and complete combination takes place between the carbonic oxide and oxygen without visible flame. A precisely similar phenomenon is observed with cyanogen and oxygen; the wire glows brightly and the cyanogen is oxidised to carbon dioxide. The tube is filled with orange vapour, both when the oxygen is present in excess and in defect, but to a smaller extent in the latter case. No flame is visible round the glowing coil of wire.

"Note on the Estimation of Resin in Soaps," by C. R. Alder Wright, D.Sc., F.R.S., and C. Thompson, was read.

After referring to various methods with which they had experimented, the authors stated that the process recommended by Gladding (*Chem. News*, April 14, 1882) seemed to give figures most in accordance with the truth under certain conditions. The method consists in separating the fat acids, dissolving about 0.5 gram in 95 per cent. alcohol, neutralising with saturated alcoholic potash, then adding a few additional drops and boiling to saponify any small quantity of glyceride present (through imperfection in manufacture, &c.); after cooling, ether is added to 100 c.c., and finely powdered neutral silver nitrate, and the whole well agitated; finally a known fraction of the ethereal solution of silver resinate, &c., is treated with hydrochloric acid, and the liberated resin, &c., weighed after evaporation of the ether. Gladding states that 100 c.c. of alcoholic ether dissolves 23.5 mgrms. of oleic acid, when "pure fat acid" (mixture of stearic and oleic?) is thus treated; and this correction-factor he found to be applicable with accuracy when Castille and linseed oil soaps and soaps containing known amounts of resin were examined.

Our experience, however, is that 23.5 mgrms. (representing 4.7 per cent. on 0.5 gram fatty acids, and resin) is a correction-factor by no means universally applicable. With pure stearic or oleic acid it is much too large; with acids from castor-oil far too small; with various mixtures it is not far from the truth. Thus the values given in the table were obtained as the result of a large number of observations which, moreover, did not always show a high degree of concordance, notwithstanding all the care taken to avoid sources of error; partly, no doubt, this is due to the circumstance that different specimens of oils, &c., were employed in the production of the soaps treated. The temperature was throughout not far from 18° C., but was not kept absolutely uniform; which circumstance may again partly account for apparent irregularity in the solubility of the silver salts.

Although Gladding's correction of 23.5 mgrms. is not strictly applicable in all cases, yet the figures in the table indicate that it is not far from the truth in at least a number of instances of mixtures likely to occur in actual manufacture; in such cases a tolerably fair approximation to the truth is attainable by assuming that the weight of the resin apparently found in 0.5 gram of fatty acids should be diminished by some 25 mgrms., or, what is the same thing, that the percentage of resin found in the total fatty acids, &c., is 5 per cent. too high. But this correction cannot be regarded as applicable universally.

A source of error that should not be overlooked is that the concentrated alcoholic potash used as directed by Gladding is liable on keeping to become dark-coloured, and in so doing to contain more or less notable amounts of resinoid matter (from action on the alcohol or impurities contained therein). Several milligrammes of increment in the ether residue may readily be brought about by the use of such potash solution. Another source of error is the decomposition of certain of the insoluble silver salts of fatty acids by light, causing in some instances appreciable amounts of additional matter to become dissolved in the alcoholic ether.

Nature of fatty matters in soap examined	Fatty matters dissolved (as silver salt) in 100 cc. of alcoholic ether		
	Maximum	Minimum	General average.
	mgrms.	mgrms.	mgrms.
Pure stearic acid	16.0	8.0	11.6
" oleic	15.0	9.0	12.0
Nearly pure palmitic acid.. ..	30.0	28.0	29.1
Cotton-seed oil	34.0	20.0	26.9
Castor-oil	62.0	49.0	55.9
Cocoonut oil (fatty acids dried on water-bath)	17.5	12.0	14.8
Cocoonut oil (fatty acids dried over H ₂ SO ₄)	23.0	19.0	21.1
Stearic and oleic acids, in nearly equal proportions	22.0	18.0	19.1
Stearic acid and cotton seed oil, in nearly equal proportions .. ..	..	..	25.5
Oleic acid and cotton-seed oil, in nearly equal proportions.. ..	..	..	24.5
Stearic acid and cocoonut oil (water-bath), in nearly equal proportions.. .. .	..	..	23.4
Oleic acid and cocoonut oil (water bath), in nearly equal proportions .. ..	..	..	25.6

The next papers read were a "Note on the Constitution of the Naphthalene-derivatives," by R. Meldola, and one on "The Action of Ammonia on Chromyl-dichloride," by Samuel Rideal, B.Sc.

The last paper read was on "The Properties of the Nitro-benzalmalonic Acids." By Charles M. Stuart, M.A.

ANNIVERSARY MEETING.

THE anniversary meeting of the Chemical Society was held on Tuesday, at 8 p.m., the President (Dr. Hugo Müller, F.R.S.) in the chair, and between thirty and forty fellows present.

THE PRESIDENT, in submitting the report on behalf of the Council, said that the prosperity of the Society had not diminished during the year, the net increase of fellows being 71, thus bringing the total fellowship to 1431. After referring to the losses by death, and stating that obituary notices of those whom he named would be submitted in due course, he passed on to notice the work accomplished during the year, and congratulated the members on the increase in the number of papers, from 67 in the previous year to 104 in the present. This was the largest amount of work accomplished in any year but one during the history of the Society. The papers embraced a wide range of subjects, were of great interest, and from the nature of discussions it was evident that they were appreciated. This indicated that original work and research had increased remarkably during the year. The future would show whether this increase was accidental or was a sign of new life; he was inclined to believe that it was not accidental, but was due to the establishment of laboratories throughout the country, that these were now giving evidence of their existence, and might be looked for to continue to contribute their quota to chemical science. In referring to Dr. Klein's lecture to the Society, he said that he had rendered notable service to the Chemical Society in bringing under its notice the results of his own experience in biological research, which was of direct interest to chemists. Passing on, he referred to the publication of the abstracts of proceedings, which the Council had reason to believe were specially appreciated by country members, as keeping them in touch with the work of the Society. In reference to the *Journal*, he said that arrangements had been made whereby the abstracts of foreign papers would now keep pace with the time; and after paying a compliment to the editor and his colleagues he stated that the Council had considered the advisability of discontinuing abstracts of purely technical papers, and confining themselves to chemical science. Technical chemistry was now so well taken up by the journal of the Society of Chemical Industry that the Council, he thought, had done wisely in deciding to abstract nothing but new processes or those papers which might be important to science. He felt sure that all who read the journal referred to would appreciate its excellence, and for the future they could not do better than leave this matter in such competent hands. After referring to some alterations in the library shelving, and the recent publication of a catalogue, he proceeded to notice an event which he considered one of the most notable of the year, viz. the incorporation by charter of the Institute of Chemistry. He considered that that body had performed an important function in endeavouring to get chemistry recognised as a profession, and the fact that it had acquired official acknowledgment proved that it had been beneficial. He trusted that it would direct its powers to influence chemical education. Passing on to research, he mentioned that during the year 155£. was granted from the Research fund, which left a balance of income of 113£. for the year. This balance was not of congratulation, and after referring to other items in the balance-sheet he again, in closing, congratulated the members on the satisfactory increase both in membership and work. It was all the more pleasing that it occurred when activity and development seemed to languish. He was not of the opinion which was frequently put forth, that chemical science was not as much appreciated in England as on the Continent. Those who held that opinion did not take into account the more active life in England, which tended to draw all in early to practical work. There were several societies which gave ample testi-

mony that chemists engaged in applied science did do good work, and he instanced the proceedings of the Iron and Steel Institute, the Society of Chemical Industry, and the Society of Public Analysts as examples of what was done. He hoped for still greater things from provincial laboratories, the increase and progress of which were most gratifying.

Dr. J. H. GLADSTONE proposed a vote of thanks to the President for his address, and on behalf of the fellows requested that he might allow it to be printed. The motion was no formality, for he knew and appreciated the valuable services which Dr. Müller had rendered to the Society in past years, and especially during his presidency. In some respects the thanks of the Society were thanks for favours to come. Referring to the address, he expressed the belief that the increase of work would be maintained, and he felt sure that English chemists could take their place amongst the chemists of the world. He also referred to the catalogue of the library, and in concluding wished all success to the Institute of Chemistry.

Professor THORPE, in seconding the vote of thanks, congratulated Dr. Müller on the present position and future prospects of the Society. The prospects were good, for there was a rapid growth in the material appliances for teaching, and for original work in chemistry in the various laboratories throughout the kingdom.

The President having replied, the Treasurer (Dr. W. J. Russell) submitted the financial statement, which showed the income from invested funds, subscriptions, &c., to be 3,742*l.* 15*s.* 4*d.*, and the expenditure, including the purchase of stock (324*l.* 15*s.*), was 3,432*l.* 15*s.* 2*d.* Dr. Russell referred to various items in the report, and remarking on the gratifying increase of income, said that he thought members should still continue their efforts, for on previous occasions there had been a falling off, and that might occur again.

Mr. M. CARTEIGHE, on behalf of the fellows, moved a vote of thanks to the Treasurer for his able report. He did so with satisfaction, because he knew well, from experience on the Council, the zeal and energy which Dr. Russell threw into his work. He also knew that Dr. Russell was very careful of the cash and liked to keep the purse-strings tight; but he thought that they need not be afraid to expend their money liberally and usefully. There was no fear of the Society languishing; fellows did not join for the sake of the journal; there was something beyond that, and he felt that, while the efforts of the executive were continued, the fellows would look to and take an interest in the work of the Society.

The motion was unanimously agreed to, as was also a vote of thanks to Messrs. Makins and Dunstan, the auditors.

Mr. HAROLD B. DIXON, in moving a vote of thanks to the retiring office-bearers, made a highly amusing speech. He said that, as an Oxford man—as one at a distance who only could attend a meeting occasionally—he had wondered how certain things were done, and especially how office-bearers were elected. But he now understood the whole matter; it was all arranged by the Council, as the fellows present would see from the little slips of blue paper given to them, and which contained the names of next year's office-bearers. This was an expeditious piece of work which he, as an Oxford man, never would have thought of. Then there was another piece of work which the office-bearers did, and as one from a distance he appreciated its value more highly than those in town, perhaps, because, as being at a distance, all these things were seen to better advantage. The matter he referred to was the abstract of proceedings. That publication was one which country members especially could thank office-bearers for. Regarding these abstracts, he mentioned that he had noticed that, when he was at a meeting and papers were read, whether there was a discussion or not upon them, or even a very short discussion, there was always a very good one printed in the abstracts. A good deal had been said that night regarding the future, and great hopes were expressed about the good that would result from the establishing of laboratories throughout the country. He entirely differed from them on that point: there had been a laboratory in Oxford for twenty-five years, and not a bit of work had come out of it. After laughter had subsided somewhat, Mr. Dixon repeated his motion, which was seconded by Mr. Pickering and agreed to unanimously. Dr. Armstrong, Honorary Secretary, replied.

Mr. David Howard proposed a vote of thanks to the editor and his colleagues and to the librarian, and paid them a

high compliment for the manner in which they had discharged their labours. Mr. Newlands seconded.

Mr. C. E. Groves (Editor) and Dr. Thorne (Librarian) replied. In the course of his reply Mr. Groves stated that the abstracts were now up to date with foreign journals, and regarding the papers communicated to the Society during the past year, he gave it as his opinion that they showed progress, not only in number, but in quality.

Scrutineers were then appointed to receive the voting papers, and the result of the voting, afterwards handed to the President, showed that, with the following exceptions, previous office-bearers were re-elected.

Vice-Presidents: Mr. David Howard and Professor J. Dewar, M.A., F.R.S., in room of Dr. E. Schunch and Mr. W. Weldon (deceased).

As members of Council: Messrs J. A. R. Newlands, S. W. Pickering, M.A., W. Ramsay, Ph.D., and Thomas Stevenson, M.D., in room of Messrs. E. Atkinson, Ph.D., G. C. Foster, F.R.S., Ludwig Mond, and C. O'Sullivan, F.R.S.

The meeting then adjourned until Thursday.

PHARMACEUTICAL COUNCIL.

5 ST. ANDREWS SQUARE, EDINBURGH: March 31.

THE Committee of Scotch Chemists appointed at the recent meeting in Edinburgh have issued the subjoined circular to members of the Pharmaceutical Society in Scotland with a view of influencing the forthcoming election for the Council:—

DEAR SIR,—At a meeting of the Members and Associates of the Pharmaceutical Society, resident in Scotland, held here on the 10th inst., to consider the present critical position of affairs, brought about by the action of the President and Council of the Society, a Committee was appointed, with powers to take such action as might be deemed advisable to protect the interests of Members resident in Scotland, and, particularly, to regain for them that degree of control over the affairs of the North British Branch which had been successfully and loyally exercised by them for thirty-five years.

The Committee are unanimously of the opinion expressed at the meeting itself—that active measures should be taken to secure better representation in the Council: and urgently request your special attention to the following reasons for making a decided change of Members at the coming elections, in the hope that you will assist them, by your votes, in securing this end:—

1. Because a wide-spread feeling exists that, for some years back, the action and policy of the Council of the Society has not truly reflected the views of the majority of those they profess to represent.

2. In order that means may be devised more effectually to protect the interests of Members, as well as promote Pharmaceutical Education, and thus carry out the original intentions of the Founders of the Society in their entirety.

3. Because the recent action of the Council, in illegally causing a scheme of bye-laws to be passed at a Special General Meeting of the Society, *without complying with the statutory regulations*, was highly reprehensible, and calculated to bring the whole Society into discredit; and has resulted in the refusal of the Privy Council to confirm said bye-laws.

4. Because the interest taken in the transactions of the Society is greatly restricted by the close manner in which the proceedings of the Council are conducted, arising mainly from the practice of going into Committee when subjects of importance to the whole Society are under discussion—a system which prevents Members from knowing the course taken by their representatives; which is greatly abused, and for which some check must be devised.

5. Because the recent action of the present President and Council, in regard to the conduct of the affairs of the Society in Scotland, has produced a serious difficulty, endangering the well-being and unity of the Society; and it is, therefore, of the utmost importance that, at this impending election, representatives should be sent to the Council whose knowledge of the case, and whose moderation, may tend to bring about an amicable and satisfactory settlement of all points

now in dispute; and, in this connection, it must not be forgotten that the present Council has of late treated the officials of the N. B. Branch with marked discourtesy, so that, unless the new Council differ in its composition from the old, there is slender hope of successful negotiations being carried on.

The Committee, therefore, strongly urge that you will be good enough to record your vote, and use every other means in your power to promote the return of the following gentlemen, who have been induced to place their services at the disposal of the Society, as new Members of Council, in whom the Committee have every confidence:—

W. G. CROSS, Shrewsbury.
J. MACKENZIE, Edinburgh.
J. HARRISON, Sunderland.

H. B. BAILDON, Edinburgh.
Alderman J. MALTBY, Lincoln.

I am, your obedient Servant,
JAMES WATT, *Chairman*.

List of Committee.

Ainslie, William, Edinburgh
Boa, Peter, Edinburgh
Frazer, Daniel, Glasgow
Kinnimout, Alex., Glasgow
Laird, G. H., Edinburgh
Maekay, George D., Edinburgh
Maclaren, David, Edinburgh

Noble, Alexander, Edinburgh
Pinkerton, William, Edinburgh
Smith, William, Edinburgh
Stephenson, J. B., Edinburgh
Storror, David, Kirkealdy
Watt, James, Haddington

HINTS TO MINOR STUDENTS.

By "AN OLD HAND."

I DO not require to write a long introduction to this; my constituents know all about the worries, struggles, and failures in trying to get into a proper system for the Minor. They know too what it is to read an unreadable book, what to burn the midnight oil, and all that sort of thing, which is generally known as "stewing up" (hence *stu*-dent). What I now write is only for beginners; for others I may write at a future time. I assume that I am asked the question, "What is the best way to study for the Minor."

METHOD.—The student should, before he commences study, calculate how much spare time he has available, and how long he can read at night without becoming drowsy, or materially changing the hour at which he has been accustomed to go to sleep. That settled, he must then deduct possible interruptions, as from visitors, out-door exercise, meetings, and so on. When that is done it will be found that five days out of the seven are only available. Full allowance should be given for reading apart from technical subjects; such reading is a relief, and is important as assisting mental development generally. This is essential, especially for the young student in his teens, who has ample time to get up his work for the examination. He should not attempt very much work to begin with. Well, when a fair idea is obtained of the time at command, it should be mapped out in a diary with the work to be done. THE CHEMISTS' AND DRUGGISTS' DIARY is most suitable for this purpose, and the present year's one is a capital aid to study, for it contains a commentary on the new Pharmacopœia. We sketch two days' study as it might be entered in the diary:—

Monday, March 29. Day. One hour to botany: *the root*. Evening, 8 to 9. B.P. preparation of dilute acids; write out in pharmacy note-book abstract of strengths, characters, and tests and explanations. 9 to 9.30. Read up natural order *Ranunculaceæ* in Gerrard's *Materia Medica*. 9.30 to 10.30 read unfinished chapter on Chemical Affinity and revise the day's work.

Tuesday, 30th. Day. Acids of B.P. Night, 8 to 9. Prescription reading and Latin. 9 to 9.30. *Materia medica*. 9.30 to 10.30. Botany and revisal.

With five days of such work before you, you will first discover your failings—so much work undone, &c. Note all that at the end of each day, and you may find, when Friday arrives, that you can devote the whole of it to revisal. The strongest point about this plan is, that—unless the student is an exceptionally methodical person—the plan is oftener observed in the breach than the observance. Nevertheless it

is a system, and the writer has experienced its value. A large amount of reading is accomplished in the course of a year or two, and this is the best foundation which can be had for a short course of systematic instruction under a teacher immediately before examination. As a rule it is injurious rather than beneficial to attempt to read during shop hours; such reading is disconnected, and withdraws attention from business as well as from the subject-matter. Any time at the disposal of the student during business hours can best be employed in observing the characteristics of galenical preparations (ointments, tinctures, pills, &c.), in writing out in full Latin prescriptions from the prescription-book, and, if the employer permit it, making difficult emulsions, pills, &c. Do nothing in the shop which is not business-like.

BOOKS.—There is a large selection to choose from, but there is only one B.P., and this must be the first investment; round it all other text-books revolve. Professor Attfield some years ago wrote an excellent paper for students, in which he advised writing out in note-books condensations of the official text. This is an excellent plan when time is no object, and it may be done in this way.

CHEMISTRY. Take, for example, *Ferri Sulphas*. The student writes down particulars under the following heads:—

Ingredients.

Preparation.

Chemical changes.

Characters.

Tests and explanation.

Impurities, and how detected.

Dose, and how administered (from personal observation as well as from books).

PHARMACY. *Tinctura Aconiti*.

Ingredients.

Method of preparation.

Strength.

Dose, &c.

MATERIA MEDICA. Here a tabular form is the best arrangement; this is a good plan:—

Botanical Name	Nat. Ord.	Habitat	Part Used
Aconitum Napellus	Ranunculaceæ	Britain and Germany	Leaves and root
Active Constituents	Preparations	Adulterations and Substitutes	
Aconitine, &c.	Leaves—extract Root—tincture, &c.	Japan aconite, &c.	

So far as the B.P. is concerned three note-books are only required to begin with; afterwards, as you gain experience, you may find other useful matters worthy of annotation.

As aids to the B. P. you will find this year's CHEMISTS' AND DRUGGISTS' DIARY exceptionally useful. Attfield's "Chemistry" is now considered indispensable for the pharmaceutical student, and for materia medica and pharmacy Mr. Gerrard's lately published manual is an excellent guide. Both these books give hints to students which need not be repeated here. It is necessary to supplement Attfield's "Chemistry" by reading such a work as Roscoe's "Elementary Lessons in Chemistry," which enters more fully into the general principles of the science than it is the province of the former to do. For botany, Bentley's smaller work, "Structural Botany," is ample for your purpose. For prescription reading, Pereira's "Selecta à Prescriptis" is excellent, but if your Latin is rusty, study also Ince's "Latin Grammar of Pharmacy."

PRACTICAL WORK.—Chemistry you cannot attempt, unless in simple testing, until you have a teacher.

BOTANY.—The season for rambles in the country is approaching, and these rambles will afford much material for study; a bud, a leaf, a root—indeed any part of a plant—is worthy of examination, and although it may strike you at the

time that you get little good out of it, it is knowledge gained, and is more likely to come in useful at the examination-table than at any other time. That is a low estimate of botanical work; but here is a path indicated for you, and if you have a mind to follow it you will find a rich store of material for study strewn upon it. If possible, you should supplement field observation by some microscopic work. For this purpose all that you require is a cheap microscope—half a guinea or a guinea will get you one that will serve—and a little practice with a razor will provide you with abundance of sections in which you can observe form of cells, vessels, minute hairs, &c. All of which satisfy you that the books are correct, and impress the facts strongly upon your understanding. If you can, get also herbarium specimens of medicinal plants.

MATERIA MEDICA.—You will find the large majority of drugs in the shop, and you should examine them and compare with the description in the text-book, and apply the simple tests if possible. Unusual drugs you may often get from an obliging traveller, and he may even show you varieties or adulterations; but these can well be left until the period of exclusive study.

So far, the writer only *indicates* the lines in which a student may work; it is impossible to do more, for what may suit one may not suit another. If the student has his heart in his work, and gets a fair start, he soon is able to "fish for himself."

IPECACUANHA: ITS HISTORY, ACTIVE PRINCIPLES, AND FLUID PREPARATIONS.

By F. H. ALCOCK, F.C.S., Pharm. Chemist.

(Abstract of a Paper read before the Midland Counties Chemists' Association.)

TAKING Vinum Ipecacuanhæ as my starting-point for this paper on ipecacuanha generally, there at once crops up a difficulty, because so much has been said on this preparation in current pharmaceutical literature since September 1, 1835, that it has almost been completely threshed out, and little left to be said or done. There are, however, just one or two points which have not been published, which we can with advantage bring forward now.

(After referring to the history of the discovery and introduction of ipecacuanha to European therapeutics, Mr. Alcock thus commented upon the chemistry of the drug:—

The first chemical examination of the root was undertaken by Pelletier and Majendie, about 1817, who isolated "la matière vomitive," and named it emetine. It is worthy of note that these investigators found 16 per cent. in the cortical portion, and 1.15 per cent. in the medullium; judging from the yield of present samples, either their product was impure or ipecacuanha-root has deteriorated very much with regard to percentage of this constituent. Bucholz found 4.13 per cent., Atfield 10.5 per cent.

Of complete analyses which have appeared, the following are the principal:—

	Majendie & Pelletier		Richard and Barruel	Bucholz
	Cortex	Medit.		
Emetine	16.0	1.15	16.0	4.13
Waxy matter ..	6.0	..	1.2	.75
Fatty	2.0	..	..	..
Gum	10.0	5.0	12.4	25.17
Salts .. ..	..	..	..	..
Resinous matter ..	..	..	1.2	Soft 2.43
Starch	42.0	20.0	53.0	9.0
Albuminoid matter ..	Not	Emet. 2.45	2.4	Bitter extract 10.12
Gallie acid ..	Traces	..	Traces	Sugar 2.0
and loss	4.0	4.80	1.8	0.8
Fibre	20.0	66.60	12.0	10.8
				Extractive gum and starch 34.8, extracted by potash.

From these analyses we see exactly the kind of substance to be dealt with, and, moreover, we see plainly that the medical activity must be due to the emetine, and what

Pelletier considered to be gallic acid, but which Willigk showed to be a distinct body, and named it ipecacuanhic acid ($C_{11}H_9O_6$). There seems to be some difference of opinion as to what emetine is and should be.

EMETINE.—As originally prepared it was not pure, so that descriptions of it are more or less untrustworthy.

Podwyssotzki, who has made emetine a special study, says—as prepared by his process:—"It dissolves readily in cold sulphuric ether, chloroform, acetic ether, amyllic alcohol, methyllic and ethylic alcohols, carbon bisulphide, spirit of all strengths, oil of turpentine, and essential oils; considerable quantity in fatty oils, in fats, and in oleic acid. It is difficultly soluble in cold petroleum spirit and benzine, but easily soluble in them when heated, a portion of the emetine from such concentrated solutions being again precipitated on cooling. It is still more difficultly soluble in cold water (1 in 1,000). From sulphuric ether, petroleum spirit, fatty oils, and similar liquids, it is precipitated by acids. It is very bitter and somewhat astringent, and the same is true of its salts. By the action of sunlight it becomes coloured yellow, which is specially intense if simultaneously long exposed to the air. Protected from direct sun-rays it remains white. By evaporation of an ethereal or alcoholic solution slowly it is deposited in extremely thin flakes, but by more rapid evaporation as granules. Its melting-point is 62° to 65° C. It has a strongly alkaline reaction, and neutralises acids; its salts do not crystallise in a regular form, but can be obtained as shining, almost colourless, lamellæ.

The salts dissolve readily in water, spirit, and fatty oils, but are insoluble in sulphuric ether, petroleum spirit, and benzine. It may be obtained as a carbonate. From aqueous solutions it is precipitated by all alkali and earthy salts as a white or coloured powder, partially soluble in an excess of the alkali salt. The chromate and nitrate are the least soluble, but they also dissolve on warming. With concentrated H_2SO_4 it yields oxalic acid; with all the alkaloidal reagents emetine gives, even after long standing, non-crystallising precipitates. Tannic acid gives tannate of emetine, which is very insoluble in water and unalterable in the air. A drop of fresh saturated solution of phosphomolybdate of sodium in concentrated H_2SO_4 , brought in contact with a particle of the alkaloid, colours it brown, and if a drop of concentrated HCl be then at once added, the brown colour rapidly passes to an intense indigo-blue colour. Other alkaloids, however, give this."

Pander says:—"Sulphomolybdic acid with emetine gives a red coloration, passing quickly to green. Concentrated H_2SO_4 produces a brownish colour, with a greenish reflection. [This reflection may also be observed when emetine is dissolved in acetic or tartaric acids.] Nitrosulphuric acid gives a yellow coloration."

Reich, in 1863, succeeded in obtaining crystals of the hydrochlorate of emetine, and more recently Fluckiger has produced this salt in a crystalline form.

Power says a solution of chlorinated lime with emetine produces a bright orange or lemon-yellow colour, and this he states to be due to the $HClO$. It was observed by A. T. Snellings that, by using a few drops of HCl and a little $KClO_3$, and a drop of a solution of emetine an orange-red colour, changing to violet, results.

Opinions seem to differ as to what is the correct formula for this alkaloid.

An analysis by Reich indicated . . . $C_{20}H_{29}N_2O_6$ (1863).
An analysis by Glenard indicated . . . $C_{20}H_{24}N_2O_6$ (1875).
An analysis by Lefort and Wurtz indicated $C_{20}H_{26}N_2O_6$ (1877).

The only other constituent of ipecacuanha calling for remark is the glucoside, Ipecacuanhic acid, discovered by Willigk. It is prepared by exhausting the root with boiling alcohol, s.g. 0.840, treating the tincture with oxacetate of lead, and after washing with alcohol, dissolving the lead salt in acetic acid. This solution is again subjected to the lead and purification treatment, the salt dissolved in ether and decomposed with H_2S . The filtrates in the process contain some ipecacuanhic acid, and this is freed from them in a somewhat similar way. The ethereal solutions containing the acid are evaporated in a CO_2 atmosphere, the residue dissolved in water, decolorised, and evaporated at 100° C. in an atmosphere of carbonic acid gas. The acid is a reddish-brown substance, of a strong bitter taste, hygroscopic, soluble in water, alcohol, and ether. Normal lead acetate does not precipitate it. Its

reactions are characteristic: it readily absorbs oxygen, becoming darker; with ferric chloride it gives a green, and with ammonia a violet colour, which is intensified to blackness by excess, a brownish black substance separating. By heating a formic-acid odour is evolved. The residue is difficultly combustible and carbonaceous. The acid is analogous to caffeotannic acid, but differs in percentage of oxygen.

ESTIMATION OF EMETINE.—In the course of the paper the author described seven processes for the assay of the root namely, Pelletier's, Pelletier and Dumas's, Atfield's, Lenoffsky's, Glenard's, Lefort and Wurtz's, and Podwysotszki's. The process which he preferred was Lenoffsky's, regarding which he said: This consists in digesting the root in acidulated alcohol for twenty-four hours, evaporating to remove alcohol, and titrating the residue with Meyer's solution of known strength. (*See CHEMIST AND DRUGGIST*, 1872, p. 108.)

In a paper before the Aberdeen Conference meeting last year, Mr. Naylor appears to have examined many methods of assay, but finally adopted this one, which under certain conditions he found was the most suitable when comparative results were needed. He slightly modified the process by removing extraneous matter by means of lime. Allen, in his "Organic Analysis," calls attention to the fact that this process could not be accurate in the presence of ammonia or its salts, as also alcohol and acetic acid, and that mucilaginous matters must be removed first. Dr. Muter recommends this process in his "Pharmaceutical Text Book," and very recently in the *Pharmaceutical Journal*, January 23, 1886, Dr. A. B. Lyons bears testimony to its value, and adds that it is reliable and easy of execution.

In the face of this evidence it may be considered suitable to adopt it in inquiries about the quantity of alkaloidal matter obtainable from ipecacuanha, its preparations, etc. Lenoffsky's original process is as follows:—*Extraction*: 15 grms. of root, powdered, are mixed with 15 drops dilute sulphuric acid and q.s. 85-per-cent. alcohol to make the volume up to 150 cc.; digest 24 hours, filter off 100 cc., remove the alcohol, and add Meyer's solution, of known value, to the solution until it ceases to give turbidity.

Turning now from ipecacuanha and its alkaloid we pass to its preparations. (The author then enumerated the past and present preparations, *e.g.*, *acetum*, *oxymel*, *extract*, *acetic extract*, *fluid extract*, *syrup*, *tincture*, *powders*, *lozenges*, *decoctions*, *infusions* and *the wine*.) Continuing, he said:—

We are all well aware that the formula and *modus operandi* of vinum ipecac. has undergone a sudden and very important change, and to find out the reason why we need only refer to the past literature on the subject for complaints which have caused this alteration. We are all acquainted with its turbid appearance prepared in the old way, and how that this appearance developed *de die in diem*, and although removed by filtration, such a procedure only temporarily remedied this "defect," and a deposit appeared again as great as ever. It was originally thought that this deposit was nothing more than inert vegetable matter, such as mucilaginous principles, ulmine, etc.; but many investigators—including Mr. Johnston, chemist, well known in Birmingham, who read a paper before the meeting of the British Pharmaceutical Conference held here in 1865, and also Mr. Brownen (*Year-book of Pharmacy*, 1878)—showed that the deposit consisted of much emetine, combined with ipecacuanhic acid. This cause of deterioration in the strength of this important preparation lead to the adoption of the present method. In tracing the origin of the process, I came across the paper by Mr. Johnston, which seems to be the forerunner of our official process. It is entitled "Acetum Ipecac.," and its mode of preparation is somewhat as follows: to 2½ oz. of comminuted ipecacuanha root were added 5 fl. oz. acetic acid, and maceration allowed for 12 hours; 35 fl. oz. of water were then added, and the whole macerated for 24 hours longer, then filtered, and the marc pressed; a preparation double the strength of the then official wine was obtained. By means of a few elementary tests the author showed that it contained much emetine. He found that such a preparation remained clear and bright for a long time. In a discussion which followed the reading of this paper, Mr. Brady said that water was good as a solvent of the active principle of ipecacuanha, as shown by the effects of the syrup; sugar is a preservative.

The next important paper bearing on this subject is one

by Dr. Dyce Duckworth (*Pharmaceutical Journal*, (3) ii. 721), read at an evening meeting of the Pharmaceutical Society. He expressed dissatisfaction with vinum ipecac., and recommended the following formula, arranged and worked out for him by Mr. Carteighe—

ACETUM IPECAC.					
Bruised ipecacuanha root	..	..	..	..	1 oz.
Acetic acid	..	..	..	..	1 oz.
Distilled water	..	..	..	..	q.s.

Macerate the ipecacuanha and acid for 24 hours; pack in a percolator, and pour distilled water gradually over it until one pint of percolate has been obtained. The product is described as a clear bright brown solution, which throws down no sediment. Dose, 10 to 15 minims. Emetic, 5ss.

(The oxymel was made in a similar way, but in this case the first ten ounces of percolate only were used to mix with two pounds of clarified honey.)

In 1880 Mr. J. B. Barnes communicated to the Pharmaceutical Conference a paper on ipecacuanha wine, wherein he gave a formula which is practically that now official in the British Pharmacopœia.

Mr. Barnes tried Mr. Carteighe's forms for "acetum" and "oxymel," and evaporated the acetum to dryness, subsequently macerating the dry extract in a pint of sherry wine for 48 hours, and filtrating. By this means a rich brown solution was obtained, which in a specimen made eight months previously had not thrown down the unsightly muddy sediment so familiar in the case of the old wine. He noted that a white crystalline deposit of KHT. appeared in about a fortnight, but no ipecacuanhate of emetia was observed. By this treatment the acetate of emetine—a very soluble salt of the alkaloid—was obtained; the wine also was slightly acid, but he was of opinion that the extent was so trifling as not to be at all likely to interfere with the action of alkalies which might be prescribed with it. A four-drachm dose proved an efficient emetic when given to an adult.

(Mr. Alcock then referred to the fact that Mr. Barnes's process had been known for five years before it was introduced into the Pharmacopœia, yet no voice had been raised up against it. Immediately after the publication of the Pharmacopœia a host of critics arose, and in his manuscript he gives a summary of the criticisms of thirty individual pharmacists. These form a most chaotic mass of contradictory statements, and we but consider the interests of our readers by giving Mr. Alcock's own experience.)

THE PERCOLATION PROCESS.—One experiment performed by the ordinary method, in a long narrow Winchester quart bottle with the bottom removed, was a decided failure. A long narrow conical one answers better. The maceration should not be conducted in the percolator, but in a separate vessel, and, before transferring, the addition of a little water is beneficial, or otherwise when the root is used in powder we should have to pack a mass not unlike dough. Reference to the analysis of ipecacuanha seems to reveal the cause. No water should be added until the fluid ceases to drop.

EVAPORATION.—The whole percolate, which for 1 oz. is required to be 1 pint, should never be collected together, because the first few ounces contain the greatest portion of the acetic extractive. An experiment on 8 oz. of the root showed that the first 10 fl. oz. contained 47·8 grains of extract per fl. oz., and this fluid had a specific gravity of 1·046. The remaining 7½ pints only gave 283 grains of extractive. The strong solution may be set aside, and when the more dilute percolate is obtained and has been evaporated to a low bulk by a naked flame, they could then be mixed and the evaporation continued on the water-bath or by other suitable means.

It takes a long time to dry the extract, and although it can be shortened by constant stirring, it must be injurious to the product, and especially so judging from the strong acetic odour which is given off during this process. In one instance the extract from 8 oz. required from 9 A.M. until 6 P.M. to bring it to a condition of dryness fitting it to be removed and powdered. Both the removal from the dish and the powdering are troublesome, and in some cases when the product is kept in a well-stoppered bottle it gradually assumes the shape of the vessel, and agglutinates so much as to be difficult to get out again. In another batch, however, drying was more quickly accomplished, and the product was not

lygroscopic, as was proved by exposure to the air of the laboratory for two days, when one gramme only increased to 1.009.

I believe it best to dry the extract thoroughly, because in one case in which this was not done the finished product smelt very much like vinegar, although the wine used was a good one. To facilitate the drying of pectinous extracts, it is beneficial to add a little S.V.R. towards end of process—which seems to act in very much the same way as alcohol does when added to milk—to rapidly obtain the solids in a dry state.

AMOUNT OF EXTRACT.—With regard to this point, it depends largely upon the value of the root and mode of operation. My first attempt was upon a 12-oz. batch, which was carried out as faithfully as possible, and therefore 12 pints of percolate were collected. This seems an enormous lot, but what must it be when 20 gallons of the wine are to be made? On evaporating this quantity the yield was 785.6 grains (dried to practical constancy.)

A second batch of 8 oz. was tried, and as the powder was very fine the percolation was very slow. A little more than six pints only were collected, as it was found that then the gravity and amount of solids contained in what passed pointed to practical exhaustion.

In offering a few remarks on the process, I can only say that with great care exercised in the selection of the root, and paying attention to the proper comminution of the drug, kind of percolator and mode of percolation, a judicious use of the prescribed menstruum, and exercising discretion when the process of evaporation has to be conducted, and last, but not least, the choice of sherry wine—most suitable in this case—we shall get a better preparation than its predecessor in many ways, including the presence of more alkaloid, and of greater keeping powers and smallness of deposit.

(1) *With regard to the Root.*—The Pharmacopœia gives no directions for ascertaining the amount of alkaloid present in the root. In this matter we are behind the German authorities, who in their 1880 Pharmacopœia give a test which is intended to show the presence of emetine, although no definite amount is stipulated. It is easy to show that the quantity of active principle found in this drug is very variable; and I may also say that it is difficult to account for the large yield which was obtained by the early experimentalists, for modern authorities seldom record the existence of more than 1 per cent. I have examined a considerable number of samples, and none have appeared much above 1 per cent. I have met with as low as 0.12, and per cent. with 0.3 per cent. and 0.4 per cent. very frequently, while 0.8 per cent., 0.9 per cent., and 1.0 per cent. are common. That the alkaloid is the only essential constituent appears to be undecided, but the same remark may be applied to the cinchona bark, yet the estimation of the alkaloids is taken as a criterion of its value.

(2) *Concerning Comminution.*—The expression “coarsely powdered” seems to me to be indefinite, and especially do we notice this, since so much attention has been paid to the choice of sieves of various meshes when dealing with the pulverisation of official drugs. A No. 30 or 40 sieve would do very well, although perhaps it may be better to allow each operator to use his own judgment. It would have been good to prescribe the use of the cortical portion only from a definite amount of root, since it is in this part that almost all the alkaloid resides. I have used a coarse powder obtained by simply placing the root in the stampers of the drug-mill for a short time; in another experiment I used a powder obtained by passing through a No. 40 sieve, and again one through No. 60 sieve. On the whole, the results with No. 40 sieve were the best. The first 84 fl. oz. had a specific gravity of 1.0104, and each fl. oz. contained 8.8 grains dry extract, giving in the whole 739.2 grains; 40 fl. oz. which followed had a specific gravity 1.0005, and the whole on evaporation gave only 10.52 grains. Total yield for the 8 oz. 749.72, or 93.7 grains to each oz. of the root.

Yet another experiment was tried with 8 oz. more of the root, but this time in No. 40 powder; this seemed a more successful attempt, percolation going on nicely and at not too quick a rate. The first 10 fl. oz., which had a rich deep brown colour, was clear, had a specific gravity 1.046, and each fluid ounce contained 47.8 grains of dry extract, or on the whole 478 grains. About 73 fl. oz. more were collected, and this gave 283.28 grains; and the exhaustion seemed prac-

tically complete. The total yield from this was therefore 761.28 grains, or 95.16 grains to each oz. of the root used. The ash of this amounted to 8.5 per cent. and contained much lime.

SOLUTION OF EXTRACT IN WINE.—If the extract is not reduced to a fine powder before maceration in the sherry, it will be found after the prescribed time has elapsed that some of the particles, which during the heating process appear to have fused, do not yield to the solvent action of the wine, and hence a weaker preparation. A little warmth is not objectionable, although it should not be much prolonged. Under all circumstances there is much not taken up by the wine; one of my experiments showed 16.9 per cent. insoluble in sherry, and another 20 per cent.

CHOICE OF WINE.—It is imperative, I believe, that the wine should be freed from as much of its tannin as is possible by such means as will not be injurious or interfere with the ultimate product. Isinglass is an innocent and fairly effectual remedy. Might not the addition of a little emetine or the extractive be used to prepare the wine for this special purpose, as the tannate of emetine is not very soluble, and each seems to have a special desire to combine with the other? A good sound sherry appears to be the best. One which I used did not answer very well, because a deposit appeared after a month, but much of this was KHT. It contained tannin, as shown by ferric chloride, its gravity was 0.9864, and the amount of solids which it contained 3.26 per cent. by weight (dried to constancy at 212° F.). Our Pharmacopœia unfortunately does not give us much information or any crucial test whereby we can recognise this medicinal agent. It says, “A Spanish wine: characters, pale yellowish brown, containing about 17 per cent. of alcohol.” The 1867 edition hinted that if it contained 18 per cent. no objection would be raised. Now, there is sherry and sherry. The U.S.P. gives the following description and tests for sherry wine, which are more explicit than our own:—“A pale amber-coloured or straw-coloured alcoholic liquid, made by fermenting the unmodified juice of the grape, freed from seeds, stems, and skins. It should have a full, fruity, agreeable taste, without excessive sweetness or acidity, and it should have a pleasant odour, free from yeastiness. Its specific gravity between 0.990 and 1.010; 10 cc., diluted with an equal volume of water and treated with 5 drops of test solution of ferric chloride (10-per-cent.), only a faint greenish-brown colour should appear (absence of tannic acid). Upon evaporation and 12 hours’ drying on the water-bath it should leave a residue of not less than 1.5 per cent. and not more than 3 per cent. Using litmus-paper as an indicator, 250 cc. should require, for complete neutralisation, not less than 15 and not more than 26 cc. of the vol. sol. soda. Tested by a prescribed method, the quantity of absolute alcohol, by weight, should be not less than 10 per cent. and not more than 12 per cent.” A stronger wine is also official, which may contain 20 to 25 per cent. absolute alcohol by weight.

In answer to the question, Is the root exhausted by this treatment?—as far as my experiments go it is not by any means exhausted of its alkaloid, for in every case in which I have examined the marc there were strong indications of the active principle still being present. One experiment showed the presence of 0.291 per cent. of the emetine in the marc, when the original root contained 0.98 per cent. This was the coarsely-powdered root previously alluded to. The powder which had been passed through a No. 40 sieve, after treatment contained 0.145 per cent., and a third residue only contained 0.097 per cent. To more completely exhaust the root the quantities suggested by Johnston would be more effectual, viz., 1 oz. root and 22 oz. acetic acid, with maceration. It is generally taken for granted that acetic acid is the best solvent for the active ingredient, and it also has the advantage of volatility. I have, however, on the strength of a note contained in the Pharmacopœia used in my student days (which reads as follows: “Vinum Ipecac. deposits ipecacuanhate or cephaelate of emetine and KHT, and hence loses its power; citric acid prevents this”), made a preparation from the wine plus 200 grains of this acid to a pint, and found that the marc contained 0.0873 per cent. alkaloid, the initial strength of root being 1 per cent. emetine. The wine after being kept two months is quite as presentable as any of the samples I have prepared. Its acidity, however, may militate against its use. Seeing that Lenoffsky adopts a

strong alcohol spirit acidulated with dilute sulphuric acid, I made a menstruum containing 200 minims acid. sulph. dil., B.P., and macerated for the prescribed time. This, on being filtered, remained clear one day, and afterwards threw down a remarkable precipitate, somewhat heavy, and of a dirty white colour. The marc from this treatment contained 0.306 per cent. emetine; initial strength 10 per cent. The precipitate excited my curiosity, but it looked so much like what we meet with in certain stages of De Vrij's method for cinchona alkaloid extraction, that I at once thought it to be sulphate of calcium. The wine did not contain the calcium compound; but by incinerating a quantity of the *ippecacuanha* root I found 3.62 per cent. ash, much of which was calcium, and the problem being solved by examination of the precipitate, which proved the truth of my conjecture.

I have not quite concluded some experiments on the effect of alkaline solvents, for we are assured that some, at least, are good and well deserve a trial; but I may be allowed to offer one more experiment, which goes to show that acetic ether is a good alkaloidal solvent, and this might be taken advantage of by using as a menstruum an alcoholic solution of acetic acid, or even the ether itself, since its low boiling-point and high volatility and powerful solvent action would enable us to obtain the emetine more completely from the root, thus giving a stronger preparation, and also recovery of menstruum by distillation, and very little heat being used. The residue to be dissolved in a 20-per-cent. alcohol slightly acidulated with citric acid. Experiment has shown that acetic ether removes all the alkaloid.

FRENCH CORRESPONDENCE.

(From our Special Correspondent.)

A FRENCH PHARMACEUTICAL EXAMINATION.

A SEMI-ANNUAL examination of the students took place at the Paris College of Pharmacy on Friday and Saturday, March 26 and 27. Your correspondent was somewhat disappointed at the absence of the pageant of professors in regalia, mace-bearers, &c., which is beheld on some occasions; but the younger participants in the ceremonies were none the less anxious, or visibly impressed with the proceedings. The third year's students were to be on the rack this time, and their success or failure was to decide whether they would be allowed to proceed with their last half-yearly course before graduation, or be adjourned to another session, with the attendant loss of prestige, and nine months of time besides.

Each day the examinations began at nine o'clock, and were held in two different places at the same time, about thirty young men appearing before a board of three professors. On the first day Messrs. Riche, Beaugerard, and Chastaing, and Messrs. Bourgoin, Gérard, and Moissan, officiated; and on the second Messrs. Chatin, Quesneville, and Moissan, and Messrs. Planchon, Villiers, and Chastaing. On the first day six students failed to pass, and ten on the second; making a total of 16 out of 118 candidates.

A singular custom of the college is that the three professors sit at the same table, and all examine one student at the same time. Hence it is impossible to take down all the questions, and difficult to hear even what occurs with a single candidate. The proceedings, although public, as is the rule with all examinations here, are rather informal, and look to a certain extent like a family affair. The questions are not printed, but chosen at will from the programme of the lectures delivered during the preceding six months, as the aim of the examination is chiefly to ascertain whether the candidates have profited by their attendance, and also whether they have been assiduous, no roll-call being customary at the lectures.

To give an idea of the range of the questions, a number of them are given below, somewhat at random, just as they were overheard.

Chemistry and Pharmacy.—How would you distinguish turpeth mineral from nitrous turpeth? What are the different combinations of lead with oxygen? How would you prepare plumbic acid.

Analytical and Pathological Chemistry.—How do you separate iron from manganese? How would you identify arsenite of soda? What are the distinctive characters of zinc compounds? Of lead compounds? How many phosphorous acids are there? How are they identified? How is albumen detected in urine? How is it estimated? What are the tests for sugar in urine? How is its proportion estimated? How would you estimate potassium iodide in the presence of chlorides? How would you estimate phosphates?

Natural History.—How is wax elaborated by bees? What is the difference between a spider and an insect? Describe myriapods, and state in what respects they differ from insects. How are molluscs classified? What is a cephalopod, a cuttle-fish, a snail? Give examples of gasteropods, cephalopods, &c.

Botany.—A good-sized bunch of green plants gathered from the College's botanical gardens and green-houses was laid on the professor's table, and the candidate was required to identify a number of them, taken at random. The following specimens composed one of the collections: mistletoe, ivy, speedwell, privet, goat's rue, orris, thuya, elder, yew, rue, lavender, mallow, motherwort, coltsfoot, angelica, sage, broom, celandine, dog's mercury, rosemary, and ladies' thistle. Some questions were asked, besides, respecting the botanical characteristics and history of the specimens investigated.

As has been said before, the proceedings were rather informal, the examiners acting in a somewhat fatherly manner, encouraging some candidates, scolding others; and the professors that scolded most were perhaps not those who black-balled the greatest number of unfortunates.

As the professors had been taking notes while the examination was going on, less than fifteen minutes after the last student had appeared before his judges, an usher in a black frock coat; and with a big silver chain around his neck, called out the names of each one with the quotations of *très-bien*, *bien*, *assez-bien*, *médiocre*, *ajourné*, and soon afterwards the spacious halls with their great stone columns were deserted.

PASTEUR'S RUSSIAN PATIENTS.—The autopsy of the unfortunate moujik, who died of rabies at the Hôtel-Dieu, has demonstrated the correctness of Pasteur's surmises. Dr. Richer, in the course of the post-mortem examination at the hospital, found that the mad wolf's bite had perforated the man's skull, and a piece of the animal's fang—one centimetre long (two-fifths of an inch)—still embedded in the temporal bone, was extracted and preserved. The observation had been made during previous experiments that when dogs are inoculated through trepanning the effects of the virus develop with extreme speed and violence. So that, although the patient has been lost, his death is accounted for, and affords important data for the future. All the other Russians are doing well. The pope Jerchoff was on Saturday successfully operated upon by Dr. Richer for the fearful lacerations in the lips and jaw-bone inflicted by the rabid animal. All the other patients are doing well, and will probably leave Paris next Saturday.

FATAL POISONING AT MAZAS.—A consumptive prisoner named Divet, being taken with a violent fit of coughing, sent for the *interne* pharmacist Bardin, in charge of the prison hospital. The pharmacist prepared the usual cough mixture prescribed by the prison physician, and directed his assistant, Jeanton, a prisoner, to deliver it to the patient. But Jeanton gave the vial to another prisoner, Martin, who placed the mixture on a table. Later on *interne* Bardin, having heard of the neglect, went for the bottle himself, mistook for it a similar one containing ammonia and camphor, and gave a tablespoonful of this to the patient. Divet spluttered, turned red, and in fifteen minutes was dead. Before the court, physicians having testified that the mistake was not to a certainty the cause of the decease, the judge was very lenient. Bardin and Jeanton were only fined 50 f. and 25 f. respectively. There is no graduated pharmacist at Mazas—an *interne* is only a student preparing for the diploma.

THE BOURSE ANARCHIST.—A search has been made by the police of the rooms occupied by a pharmaceutical student at 6 rue Gay-Lussac. He was suspected of having been connected with Gallo, the thrower of harmless bombs and stinkpots. The student admitted having made speeches in anarchists' meetings, but denied all knowledge of Gallo and his infernal machines. In fact, besides papers and documents

nothing was found of a suspicious character. French pharmacists feel annoyed that one of their number, even if he be but a student, should be accused of turning out such wretched explosives.

ATTEMPTED MURDER AND SUICIDE BY A PHARMACIST.—Last Monday M. Musset, a pharmacist of the rue du Bac, shot and wounded a Mrs. Renouf, his alleged mistress, and then shot himself to death. The woman lies in a critical state. The body of the pharmacist has been to-day transferred to the Morgue, and the pharmacy is closed.

TRADE-MARKS APPLIED FOR.

THE Trade Marks Journal publishes the following notice:—"Any person who has good grounds of objection to the registration of any of the following marks may, within two months of the date of this journal, give notice in duplicate at the Patent Office, in the form 'J,' in the second schedule to the Trade Marks Rules, 1883, of opposition to such registration." All communications relating to patents, designs, or trade marks to be addressed to H. Reader Lack, Esq., Comptroller-General of Patents, Designs, and Trade-marks, Patent Office, 25 Southampton Buildings Chancery Lane, London, W.C.

From the "Trade Marks Journal," March 31, 1886.

- "OLD TIMES," and autograph, for common soap and detergents, toilet soap and perfumery. The East Lancashire Soap Company, Clayton le-Moors, near Accrington. 49,188/9.
- "LIMO-LEMON," with a tree and the words "Tired Nature's Sweet Restorer Salt;" for medicinal powders for human use. William Alexander, chemist and dentist, Banff, N.B. 49,221.
- Girl with basket of flowers, and autograph; for perfumeries Zeno & Co., 16 Rathbone Place, W. 49,244.
- Three-panelled label; centre one with portrait and arms; for Hunyadi László mineral-water. La Compagnie Générale d'Eaux Minérales et Bains de Mer, 3 Rue Rossini, Paris. 49,266.
- "NEW TIMES," and autograph; for common soap and detergents, and toilet soap and perfumery. East Lancashire Soap Company, Clayton-le-Moors, near Accrington. 49,519/20.
- Label, with scroll and figure of a shilling in centre; for syrups (not medicinal). Adam Hill, trading as "The London Temperance Beverage Company," 258 High Holborn, W.C. 49,595.
- "MRS. JOHNSON'S AMERICAN SOOTHING SYRUP," "WOODHOUSE'S BAL-SAM OF SPERMACEIN," and "DREDGE'S HEAL-ALL;" for medicinal preparations for human use. G. R. Barclay, 95 Farringdon Street, London. 49,820/2.
- "GINGER STOUT," and autograph; for an unfermented, non-alcoholic, aerated beverage. Batey & Co., 216 Kingsland Road, London, E. 50,065.
- Lap-dog, with crown superposed, and the words "Count d'Orsay's Hair Reviver" between; for hair-reviver. Frederick Mirns, trading as "Professor Moro," 6 Dove Court, Old Jewry, E.C. 50,089.
- Label, with figure resembling Old Temple Bar; for Marsh's sparkling citronade. E. R. Marsh, 49 Clippenham Road, St. Peter's Park, W. 50,136.
- "SUPREMA;" for non-alcoholic aerated beverages. Batey & Co., 216 Kingsland Road, London, E. 50,291.
- "MOXON'S EFFERVESCENT MAGNESIAN APERIENT," Burgoyne, Burbidges, Cyriax & Farries, 16 Coleman Street, E.C. 50,298.
- Circle, with monogram "C.G." in centre; for mineral and aerated-waters. Charles Groves, 87 Albert Street, Prince End, Tipton. 50,307.
- Circle and trefoil, with sphynx; for preserved milk. Voltmer & Co. 9 Gerberstrasse, Altona, Prussia. 50,431.
- "SOUTHALL'S FOSTER-MOTHER;" for feeding-bottles. Southall Bros. & Barclay, 17 Bull Street, Birmingham. 50,511.
- "PEDELIN;" for a preparation for the feet; and "DERMALINE;" for one for the skin and complexion. F. Round, 25 York Road, Birkdale. 50,523/4.
- "WINTERETTE;" for an aerated-water. Scott & Co., Hurst Street, Belfast 50,569.
- "Ecol;" for chemical substances prepared for use in medicine and pharmacy. Burroughs, Wellcome & Co., Snow Hill Buildings, Holborn Viaduct, E.C. 50,611.
- Label, with figure of a rheumatic individual in pain, and cured; for a rheumatic tincture. Austin & Co., Banbury. 50,635.
- "NESS' TAR ELIXIR;" for a chemical substance used for agricultural, horticultural, veterinary, and sanitary purposes. Ness & Co., Darlington. 50,786.



RECEIVING ORDERS AND DATES OF PUBLIC EXAMINATIONS.
BUNTING, JAMES, Walsall, crucible manufacturer, &c. April 14, at Walsall.

FLETCHER, WILLIAM, Pateley Bridge, Yorkshire, chemist and druggist. April 9, at 11.30.

WILLIAMS, WILLIAM, Redland, Bristol, mineral-water manufacturer. April 16, at 12.

FIRST MEETING.

WILLIAMS, WILLIAM, Bristol, mineral-water manufacturer. April 8, at the Official Receiver's Office, Bristol Court, Bristol.

ADJUDICATIONS.

DRUMMOND, JOHN, George Yard, Fenchurch Street, City, and Southend, drug merchant.

FLETCHER, WILLIAM, Pateley Bridge, Yorkshire, chemist and druggist.

NOTICE OF DIVIDEND.

DARLING, HENRY, Ramsgate, mineral-water manufacturer. Dividend of 2s. 1½d., March 29, Official Receiver's Office, Ashford.

ORDER FOR APPLICATION TO APPROVE SCHEME.

REES, WILLIAM HARRIS, Haverfordwest, chemist and druggist.

INTENDED DIVIDEND.

REES, W. H., Haverfordwest, chemist. Pembroke Court. Last day for proofs, April 6, Official Receiver, Carmarthen.

APPLICATION FOR DEBTOR'S DISCHARGE.

WEIR, G., Bristol, dental surgeon. May 7, at Bristol Court.

PARTNERSHIPS DISSOLVED.

ANSTIE, F. B., & J. Cowie, Devizes, surgeons.

BEALEY, R. & Co., Radcliffe, Lancashire, manufacturing chemists, &c., As far as regards D. B. Hewitt.

BURFORD & SON, Leicester, homœopathic chemists.

Personalities.

MR. J. A. HAYNES is about to open a new business at Boscombe, near Bournemouth.

MR. E. CULVERWELL will shortly commence business at High Road, Lee, S.E., near Lewisham Junction.

MR. J. WILLSON has removed from Devizes to Bradford-on-Avon, where he has purchased the business of Mrs. Marks, who retires after forty-two years in the trade.

MR. J. W. HOYLE, late of St. Mary Church, Torquay, has succeeded to the business lately carried on by Mr. W. Surfleet at 281 Brixton Road.

MR. BUXTON has purchased the business of Mr. James Tilley, 2 Promenade Villas, Clifton, Bristol, who has retired from the drug trade.

MR. C. W. ANDERSON has been appointed dispenser to the Plymouth Poor Law Dispensary, at a salary of 80% per annum.

MR. H. P. WITHERS has taken the old-established business of Mr. Q. Harrison, at 2 Central Beach, Blackpool, and has taken the opportunity of having his shop entirely refitted, and it is now one of the handsomest shops in that town. The work was undertaken throughout by Evans, Sons & Co., Liverpool.

MR. J. B. L. MACKAY, formerly a distinguished student of the Pharmaceutical Society, has been appointed Lecturer in Chemistry and Director of the Laboratories in Trinity College, Melbourne University. Sir William Clarke lately made a munificent bequest for the erection of new laboratory buildings, and these are now being fitted up in modern style. Mr. Mackay is a Graduate of King's College, London, and till recently has been one of the Demonstrators in the Chemical Department of the Royal School of Mines, South Kensington. We are informed, too, by the last Australian Mail, that Mr. Mackay is giving temporary assistance to THE CHEMIST AND DRUGGIST OF AUSTRALASIA (our subsidiary journal), in consequence of the serious illness of the editor.



CARBOLIC ACID SOAP POWDER.

In the Court of Appeal on Saturday last, March 27, judgment was given by Lords Justices Cotton, Bowen, and Fry, in the case of Calvert v. Hudson. Messrs. F. C. Calvert & Co., manufacturing chemists, of Bradford, Manchester, appealing against an order made by Vice-Chancellor Bacon on July 23 last, directing the registration as trade-marks of two labels, the registration of which had been applied for by the executors of the late Mr. Robert Spear Hudson, the well-known chemical manufacturer, of Liverpool and West Bromwich. In September 1883, Mr. Hudson applied for the registration of a label, which he used for packets of carbolie acid soap powder. This label was registered in April, 1884. It bore on it the words "Hudson's Soap Powder," printed on an elliptical border, and in the space in the centre of the border the words "carbolie acid," and at each end of these words a device consisting of an arm holding a "dolly," with the words "trade-mark" at the side of it. The present application was for the registration of two larger labels, to be used for boxes holding the packets. These labels have printed on them in large letters, within a rectangular space in the centre of the label, the words "Hudson's Carbolie Acid Soap Powder," and at each end of the rectangle is placed the arm holding the "dolly," with the words "trade-mark." Round the outer border of the labels are printed other words, which state the uses of the article and describe its beneficial effects in highly laudatory terms. The application for the registration was made on December 28, 1883, just before the Trade Marks Act of 1883 came into operation, and there was a question as to whether the case was to be treated as governed by that Act or by the former Trade Marks Act—of 1875. Messrs. Calvert & Co. did not oppose the registration of the device consisting of the arm and "dolly," but they objected to the registration of the words "Carbolie Acid Soap Powder," on the ground that they were not distinctive, but were merely descriptive of the article, and that the applicants had no exclusive right to the use of them. At any rate, Messrs. Calvert urged, those words ought not to be registered, unless the applicants disclaimed any right to the exclusive use of them.

Lord Justice Cotton said that the application for registration having been made only two days before the Act of 1883 came into operation, he had had some doubt whether the question of registration came under the Act of 1883 or of 1875, but he had come to the conclusion that it was under the earlier Act, although, with regard to the main point, there was practically no difference between the Acts. The chief question was whether the trade-mark could be registered as it had never been used before—whether the Act of 1875 enabled anything to be registered as a trade-mark which had not been already used as such. The Act presented considerable difficulty because the essence of a trade-mark was in its having been used in connection with goods, so as to distinguish them as the goods of the person whose trade-mark was upon them. But the Act made a distinction between things used before it as trade-marks and those which had not been so used; and having regard to that distinction, it looked as if the Act intended to give things not used before it the position of a trade-mark if and when registered. Section 2 pointed to user, but also to the mode in which the title to trade-marks could be transmitted, and registration was to be deemed equivalent to public user. Section 5 presented a great difficulty, which was avoided by the Act of 1883. How could a man be "for the time being entitled to

the exclusive use" if he had never had any use at all? The meaning of the Act of 1875, though the language was not appropriate, was that the inventor or designer of a distinctive mark or device was to be the proprietor of it and entitled to the exclusive use of it if there was nobody who had used the mark before, so that his user would be interfered with by the registration on the part of the designer. It was to be remarked that there might be a right to a trade-mark used before 1875, though the owner could not bring an action without having registered his mark. As to the question between the parties, he was of opinion that the label was one which could be registered under the Act of 1875. It was a distinctive label with words added. But Mr. Hudson had claimed an exclusive right to the words, and that claim was wrong. He could not get an exclusive right to the words "Carbolie Acid Soap Powder." It was only the combination which made the label registrable. The words could not be taken out and claimed alone. It was only the whole label which could be claimed. He omitted all reference to the small design of the "dolly," because that was a distinct registered trade-mark. Section 74 of the Act of 1883 said that one could not register without adding a disclaimer of any exclusive right to the common words making part of the label. There was no similar provision in the Act of 1875. Section 6 did not apply, pointing, as it did, to something deceitful or scandalous on the face of the label, and he put aside the consideration of how far any arrangement of the same or similar words used so as to make another mark look like Hudson's would be actionable as having been used so as to make goods so marked pass as those of Hudson. The application was under the Act of 1875, and he regretted that he could not enforce the disclaimer, but the applicants would have no right to an exclusive use of the words "Carbolie Acid Soap Powder," being merely descriptive of the article to which the label was to be affixed, and by using them on the label the respondents would not get any right to prevent others from using them to describe their own goods. The Court could not therefore refuse to allow the respondents' label to be registered. But as there had been no disclaimer of the intention to get an exclusive use of those words and the litigation had been caused by that intention, the appeal would be dismissed without costs.

Lord Justice Bowen concurred.

Lord Justice Fry concurred, adding that the applicants could not get an exclusive right to the words "Carbolie Acid Soap Powder." The application was not a fair one, and had justly awakened the suspicion of the appellants.

Foreign and Colonial.

NEW CINNABAR MINES have been discovered recently in the mining region of the Don, in Russia. The ore contains from 69 to 80 per cent. of pure mercury.—*Nature*.

RUSSIAN SELTZER.—According to *Nature*, a spring of mineral water was discovered a few days ago in the very centre of St. Petersburg. In composition the water resembles Staraya Russa, or Kreutznaeh, and in taste it is quite similar to natural seltzer.

GERMAN OTTO.—Some further particulars have transpired regarding the production of rose-oil in Germany, from which it would appear that Messrs. Schimmel & Co. have made contracts with several large Leipzig florists to cultivate for them a certain quantity of roses. At present the Saxon rose-oil is much more expensive than the Turkish, being priced at 42s. 6d. per oz.; but as soon as their arrangements are in full working order the firm expect to be able to considerably reduce the price. Messrs. Schimmel & Co. believe seriously that there is a great future for their German rose-oil, and as an earnest of their convictions, they have extended the facilities of their establishment in order to produce on a great scale rose-oil, rose-water, rose-pomade, and rose-extract. From one kilogram of the Saxon oil the firm produced 300 boxes of fine rose-water, which was exported to the United States, and sold, it is said, at a good profit.



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SEE ADVERTISEMENT, PAGE xviii.

HAY'S SOLUBLE ESSENCE OF GINGER. See page 19

HAY'S NEW PREPARATIONS. See page 19

HAY'S COMPOUND FORTIFIED ESSENCE. See page 19

EDITORIAL NOTES.

COMPULSORY EARLY CLOSING.

At the meeting of traders held at the Mansion House on Tuesday last, it had been intended to pass resolutions the effect of which would have been to undermine the Shop Hours' Regulation Bill. But Sir John Lubbock appeared on the platform, and after a reception of the heartiest character he made a speech which entirely won the meeting, and completely dissipated whatever opposition existed in the minds of any of his audience to his bill. A resolution (originally an amendment) was passed by a large majority, not only supporting his bill, but urging Parliament "to go further, and to add a clause enacting compulsory general closing at 8 p.m. on five days a week, and 10 o'clock on Saturdays—a measure which would confer inestimable benefit on the general shop-keeping community and relieve them from the intolerably long hours from which they now suffer."

It is necessary to take account of this tide of feeling in favour of legislative interference with the hours of shop-keeping. A little while back such an enactment would have seemed impossible; now it is suggested and advocated by such a wide constituency, that the practical question which has come before us in pharmacy is whether we would prefer to be included in any such act, or exempted from its provisions. Both views are presented this week in our correspondence, but we cannot help thinking that those who ask to be coerced state the most forcible case. There is so little reason for any serious amount of nightwork in any wholesale or retail business, and there are such immense benefits accruing to fairly early closing, that the most vehement advocate of absolute personal freedom may almost be willing to sacrifice a little corner of his cherished economic principles for the sake of the greater bulk of happiness which would be conferred on so many of his fellow-creatures by such heterodox legislation. A business which cannot be worked within twelve hours daily evidently needs more assistants; and capital will not win much sympathy because it may have to pay an extra salary or two in order to keep within those limits.

There would be many difficulties in carrying into effect such a scheme as is advocated, and it may be, as one of our correspondents suggests, that the passing of the much simpler bill affecting "young persons" will accomplish the bigger purpose by merely indicating it, just as the Bank Holidays Act, which was only intended to affect a very limited section, has been adopted all over England. We believe it would

be best to pass the smaller measure first, and reserve the more forcible legislation. At the same time we heartily hope to see, if not by the pressure of public opinion alone, then by some gentle legal spur, an abolition of the present senseless, wearisome, soul-and-body-injuring custom of toiling from early morn till long past dewy eve, so as to secure to every one an opportunity of sharing in the innocent pleasures of social life. Some of our correspondents have well depicted the effect of unending business on men who engage in it. Sir John Lubbock hit the mark very neatly by quoting an epitaph from a Norfolk churchyard, which he thought applied to the condition of some shopkeepers:

"Here lies a poor woman who always *were* tired,
For she lived in a world where too much *were* required.
Weep not for me, friends, she said, for I am going
Where there'll neither be working, nor reading, nor sewing;
Then weep not for me, friends, if death us do sever,
For I'm going to do nothing for ever and ever."

TRADE-MARK LAW.

THE decision in the Court of Appeal in the case of Calvert v. Hudson gives an authoritative dictum in regard to trade-marks in respect of a difficulty which has long been obvious, but which applicants for registration have not appeared to appreciate. The executors of Mr. R. S. Hudson applied in 1883 for registration of a label bearing the words "Carbolic Acid Soap Powder," worked into a certain design. Messrs. F. C. Calvert & Co. opposed such registration unless the applicants would disclaim an exclusive right to the words quoted. The latter refused to make such a disclaimer. Evidently their anticipation was that they would secure an exclusive title to sell a product as Carbolic Acid Soap Powder. And this, we believe, is a general sort of intention on the part of traders when they register labels. They have a sort of vague idea that they are securing protection for the chief title which appears on the label. They assume that, as the greater includes the less, registration of the whole label must be safer than registration of one word or combination of words forming the title. But a little consideration will show the error of this notion. Carried out to the full extent it would give power to any one to secure exclusive property in even the most ordinary word if it appeared on the label registered. But Mr. Hudson's executors clearly had the intention of securing not simply the label generally but also the four particular words which were prominent on its face. These words were purely descriptive; the Registrar probably would not have accepted them for registration if they had been submitted by themselves; and the applicants are, we think, rightly defeated on this point. Messrs. Calvert & Co. have virtually gained their contention, and it seems rather hard that they should have to bear their own costs, though the Court seemed to regard it as a concession that they were not saddled with the expenses of both sides.

The practical conclusion for traders from this case is that those who wish to register a title must first of all adopt such an one as is clearly a fancy, and not a descriptive word; and then that they should offer it for registration unencumbered with any associated design or other words whatever. What Messrs. Hudson have obtained by the registration of their label generally we fail to see. They can prevent a colourable imitation of that complete label it is true; but we are mistaken if they could not do that in a Court of Equity without going through this formality of trade-mark registration. This remark applies to many of the trade-marks registered.

There still remains a doubt as to the state of the law in case of a truly fancy word appearing on a label. If instead

of the words "Carbolic Acid Soap Powder" Messrs. Hudson had called their product "Carbosapoline," and that had been regarded as a genuinely fancy word, would that registration enable them to prosecute anyone who might use the same word on a label of totally different design? We should judge not; but we are not aware that the point has been settled. Anyway it will be clearly more prudent to make sure of one's property in a word by not mixing it up with any rectangular or other device which is of only subsidiary importance.

TOBACCO-CULTIVATION IN THE UNITED KINGDOM.

ON Monday last in both Houses of Parliament the interesting question of permitting the cultivation of tobacco in the United Kingdom was raised. In the House of Commons Sir E. Birkbeck asked whether experiments in this direction would be permitted, and Sir William Harcourt said he thought such experiments might be permitted under proper supervision. In the House of Lords the speeches on the subject were much more exhaustive. Lord Harris stated the case on behalf of those who may wish to raise tobacco, in an interesting speech, which was vitiated, however, by the false economical idea that it was the duty of the Government to make something in the way of a sacrifice for the benefit of one section of the public. In an able reply Lord Sudeley, on behalf of the Treasury, indicated almost more than doubtfulness as to the chances of success, but promised that every facility would be granted to experimenters by the Government.

There is no doubt that tobacco can be grown in England. It was cultivated in this country for nearly a hundred years after its introduction. James I., whose famous "Counter-blaste" is better known than his legislative deeds, is responsible for the prohibition of the cultivation here. In the early part of his reign the Virginian planters were substituting tobacco for other crops, and James issued a proclamation tolerating this practice, because, he said, it was "of the two more tolerable that the same should be imported, among other varieties and superfluities which come from beyond the seas, than to be permitted to be planted here within this realm, thereby to abuse and misemploy the soil of this fruitful kingdom." Subsequently as a measure of protection to the American colonies the importation into England was granted exclusively to the American colonies, and for the same purpose the cultivation here was forbidden.

Lord Harris is right to some extent in saying that we at present protect a foreign product against one of home growth. But this is only partially true. The customs duty on tobacco brings in a revenue of over nine million pounds a year. Obviously the growth of the plant within the country cannot be permitted unless a corresponding excise duty is imposed. Lord Harris seems to think the British farmer can pay that duty and compete with foreign producers. If he can every facility should be given him, but under present circumstances the British grower must not expect any favour. Lord Sudeley showed that the question had been very carefully considered at various times by Chancellors of the Exchequer, and in 1830 by a Select Committee of the House of Commons. The difficulties and expense of collecting an excise revenue on such a crop are evidently serious, and these have no doubt influenced the official mind more, perhaps, than they should have done. But this objection is not insurmountable. A revenue like that which is derived from tobacco is too serious to be trifled with; but the introduction of a new and profitable crop is a great temptation in the other direction. In any case the experiments to be carried out are likely to be very interesting.

ACETONE CHLOROFORM.

TOWARDS the end of last year a report came to this country from America that a process had been discovered and patented under which chloroform could be prepared without alcohol, and therefore at a very low price. On this side of the Atlantic the rumour little affected the chloroform market; but on the other side it had a very considerable influence, the very low figure of thirty cents per pound having been touched. How far the new process may affect the method of chloroform-manufacture in this country remains to be seen; meanwhile we may draw attention to the process, which is patented in the United Kingdom.* The inventors are Gustavus Michaelis and William Turner Mayer, Albany, N.Y., U.S.A., and their English agent Mr. H. E. Newton, of the Office of Patents, Chancery Lane. The object of the invention is the treatment of crude acetates to obtain products from which chloroform can be made, the by-products being utilised for the manufacture of acetic acid or acetates. Crude acetate of lime is submitted to dry distillation at a temperature of between 300° to 500° C., which is kept up until nothing further of a volatile nature is given off. The distillate, according to the patentees, contains acetone ($\text{CH}_3\text{CO}\cdot\text{CH}_3$) in small quantities, and the following bodies, viz:—dimethylacetal, $\text{C}_2\text{H}_5(\text{OCH}_3)_2$, ethylmethylacetal, $\text{C}_2\text{H}_5(\text{OC}_2\text{H}_5)_2$, methyl dimethylketone, $(\text{CH}_3\text{COCH}_2\text{CH}_3)$, methylethylketone ($\text{CH}_3\text{COC}_2\text{H}_5$), diethylketone ($\text{C}_2\text{H}_5\text{COC}_2\text{H}_5$), metacetone ($\text{C}_6\text{H}_{10}\text{O}$), and other higher boiling ketones, such as dumasins, a large quantity of an apparently oily substance, which also holds some of the ketones, &c., in solution. The acetate yields 32 per cent. of distillate, one-fifth of which is the oily substance, the rest an aqueous liquid containing the ketones, &c. To produce chloroform nine pounds of the aqueous liquid is mixed with 40 pounds of chlorinated lime and 15 gallons of water, and the whole distilled in the usual way for preparing chloroform. The oily liquid is previously separated from the aqueous liquid, and by washing with tepid water or by fractional distillation its "chloroform-yielding bodies" are isolated. What ultimately becomes of the "oily liquid" we are not told; the residue, however, by "leaching" with water, yields up its undecomposed acetate of lime. The yield of crude chloroform is between $4\frac{1}{2}$ and 5 pounds from the 9 pounds of aqueous liquid; and the amount of recovered acetate varies from 20 to 25 per cent. of the original quantity employed. Such are the details of the process. It is particularly noteworthy that the authors state that although pure acetone only yields 33 per cent. of chloroform, yet the crude distillate of the above-mentioned composition is capable of yielding "chloroform in the large and unprecedented quantity of measure for measure." The latitude for free statement which is allowed in specifications of patents, tempts us to assume that there is some tall talk in this statement regarding the yield of chloroform. It is well known that methylated spirit is largely used in this country for the preparation of chloroform; this spirit is "methylated" with a liquid which contains a large quantity of acetone and similar ketones, and the only effect of their presence is that the manufacturers have to be careful in the purification of the crude chloroform. The question therefore arises, What proportion of absolute chloroform exists in the crude distillate of the acetone process? It is stated that the specific gravity ranges from 1.465 to 1.485, but this affords no reliable indication of the actual chloroform content. In the specification there is ambiguity as to the yield of chloroform distillate. That the ketones are capable of

yielding chloroform is quite apparent; but at what expense? In the reply to this lies the decision as to whether the acetone process will or will not be the chloroform process of the future. The difference between the initial cost of methylated spirit and the above-mentioned crude distillate from calcium acetate must necessarily be small, for the cost of spirit in the former case does not exceed threepence in the pound of pure chloroform; so that the bulk of the expense is in depreciation of plant and consumpt of chlorinated lime. Plant-depreciation may be equal in both cases. The chlorine consumpt, on the other hand, is higher with the ketone bodies; for methylated spirit it is about four of calcium hypochlorite per molecule of chloroform; for acetone six of hypochlorite, the same for ethylmethylacetal, and so on. Then the cost of purification of the crude acetone-chloroform must be infinitely greater, owing to the uncertain composition of the mixture acted upon. We can, therefore, only conclude that this process is not likely to replace that at present followed in Britain. It may be different in the United States, where the initial cost of spirit is higher; but the latest market reports from New York state that chloroform is firm at somewhat advanced rates, and this appears to indicate that the scare which followed the publication of the new process has subsided.

MEDICAL DISPENSING.

IN another column we print a report of two cases of apparent poisoning with laudanum, in which a surgeon, assistant to a medical man, is implicated. In the first case a woman of forty was the victim, and in the second a child of five months. For both, and on different occasions, the assistant had dispensed some medicine, and from the effects of this his patients died. In the case of the woman it was admitted that two drachms of laudanum were put into the six-ounce mixture; but analysis by a competent chemist revealed the presence of 1.729 grain of morphia per fluid ounce, indicating that the mixture was half laudanum. The jury returned a verdict of gross negligence on the part of the assistant. In the second case there seemed no doubt from the circumstances of the baby's death, and the symptoms, that this also was a case of opium-poisoning, though at the inquest the assistant denied that he had put either opium or morphia into the mixture, and his employer supported him by stating that there was no morphia in the surgery. Here, again, chemical analysis revealed the presence of 3.135 grains of morphia per fluid ounce! The Coroner's jury had evidently become thoroughly alarmed by this time, and at first returned a verdict which was equivalent to a charge of wilful murder against the assistant, but on this being pointed out to them, they grew alarmed in another direction, and rather reluctantly agreed to a verdict of manslaughter, and the assistant was committed for trial. It is proverbial that Coroner's juries do not as other men do, and how one case can be manslaughter and the other not, it is difficult to understand. The magistrate before whom the case of the child was brought the next day did not find the evidence sufficient to justify a committal, and Mr. Irvine was discharged. There was general agreement, however, with the verdict of gross negligence. We little expected in stating in our last issue that the training of medical students is inefficient for practice in pharmacy that such a startling and sad proof thereof should so soon be afforded us.

* Improvements in the manufacture of chloroform and acetic acid, or purified acetates. Patent No. 8,523, July 14, 1885.



AND

Literary Notes.

The Prescriber: a Dictionary of the New Therapeutics. By John H. Clarke, M.D., London, Keene and Ashwell, 74 New Bond Street, W. Pp. 187.

DR. CLARKE is a popular homœopathic physician in London, and editor of one of the homœopathic journals. This work of his, the publication of which was suggested by an experience of its necessity in the early days of his conversion, is quite a remarkable specimen of conciseness and convenience based on an enthusiastic faith. The whole region of disease is mapped out and catalogued in the neatest manner in dictionary form. We have convulsions, cornea, corns, corpulency, coryza, coughs, all in strict order; and when we get to a big affair like the last the various counties or special symptoms of every variety of the trouble are skilfully described, and the proper remedy and dose are dogmatically tagged on at the end of each sentence. Blessed indeed are those who believe. There are hundreds of prescribing chemists who would give a five-pound note for a simple treatise like this if instead of *Bry. 1, 2h.*, they could get an appropriate nasty remedy advised to each set of symptoms. From a homœopathic point of view, Dr. Clarke seems to have done his work most thoroughly. He must have hunted the "provings" through many a massive volume, and he has made homœopathic prescribing the easiest thing in the world. If the practitioner can only be sure of distinguishing between *Locomotor ataxy* and *Elephantiasis Arabum*, or if the public would only take diseases in alphabetical order, this book would finally suffice for all the rest of the treatment. In very many cases it is gratifying to notice that some subsidiary treatment of a more or less empiric nature is suggested in addition to the absolutely scientific remedies; as for example, in "calculus," besides taking *Berb.* one drop every 6 hours, "drink Carlsbad water;" in delirium tremens, besides ant. tart. $3 \times \frac{1}{4}$ h. "give the patient strong soup or beef tea." Some readers may be glad to know that in case of "funk before an examination," one drop of anacardium $3 \times$ every three hours is the best remedy.

A Short Manual of Chemistry. By A. Dupré, Ph.D., F.R.S., &c., and H. Wilson Hake, Ph.D., F.C.S., &c. Vol. I. Inorganic Chemistry. London: Charles Griffin & Co., Exeter Street, Strand. 1886. Crown 8vo. 14 + 352 pp. Price 7s. 6d.

THE number of works on chemistry has now reached such gigantic proportions that there are few authors of new manuals who do not announce their works in a half-apologetic sort of way. Drs. Dupré and Hake are of the number who know the extent of chemical literature, but they claim the right, and that no one will deny them, of letting their method of teaching be more widely known, and they ingeniously argue that the multiplicity of text-books is proof of an unsatisfied demand. The publication of scientific books is nowadays a serious matter, to authors it may mean failure financially, and if not that, gain is chiefly in reputation. The late Mr. Henry Watts affords a striking example of what it is possible for the chemist to accomplish in the field of literature and what the return may be; few professional men of modern times have left so voluminous a record behind them, yet to him piles of manuscript brought in little more, perhaps, than the copying of them would have brought to a clerk. This is not as it ought to be, but it is difficult to see how it can be otherwise with a limited and not rapid-growing circle of readers, and a steadily increasing number of authors.

The book before us is the first volume of what we take to be a series of two, and is devoted to inorganic chemistry. The book is not a large one—352 pages, exclusive of index, have sufficed for the authors to cover all known elements, and nearly one-fourth of that space is taken up with a preface account of chemical physics and other matters which

they consider initiatory to proper study of chemistry. An analysis of the book reveals three leading divisions: (1) Introduction, comprising an account of matter in its various conditions; its properties, and the effect thereon of heat, light, and electricity; chemical action, affinity, and all other subjects which are universal or special in the sphere of physico-chemistry. (2) The non-metals and their compounds. (3) Metals and their compounds, which are further divided into the five recognised groups, *alkali metals*, *metals of the alkaline earths*, *heavy metals*, and *noble metals*. Each of the elements is considered in chapters with the following headings: *Occurrence in Nature*, *Physical Properties*, *Chemical Properties*, *Distinguishing Tests*, *Physiological Action*, *Preparation and Manufacture*. These chapters are preceded by a brief one of physical constants. The rare metals are not treated so fully, but this is compensated for by taking them in their proper order and not relegating them to an uninviting appendix, which students purposely forget to look for. The most important compounds are treated on the same lines as the elements.

It will be seen from this analysis that the plan of the book is excellent; the point upon which we may differ from the authors is as to its suitability for those who have "no previous knowledge of chemistry whatever." We would say that it is quite unsuitable for schoolboys, and is better suited for those who have the power of reasoning developed to some extent, and have acquired a smattering of chemistry previously. This is no fault of the authors: they write forcibly and racy, and express abstruse facts in a remarkably clear way.

The introduction is an excellent part of the book; every technical term employed is fully explained in footnotes; facts and laws are interpreted by striking and familiar examples, and worked-out problems and comparative tables also add their weight for mnemonic influence. In chemistry proper the authors have succeeded in infusing something of freshness into the pages. This freshness is due partly to their expressive diction, partly to new ideas and new processes—that is, *new* to text-books. There is a tendency with some authors to content themselves with giving the young generation a repetition of what they themselves were taught, forgetful of the progress which they may have themselves assisted in. In the present instance the aim is to give prominence to modern and improved methods, to facts of practical value and of theoretical importance. It is matter of this kind which makes a book valuable to the student and practical man alike. Facts and figures of practical importance are also copiously given, and to an extent which one does not expect in so small a book. We may instance several passages which we have marked for reference:—Water (pp. 102–110); carbon, its compounds and the atmosphere (pp. 130–147); the chapters on general characteristics of non-metals (p. 199); of metals (p. 342); and salts (p. 346). These and several other passages are excellent. On the other hand, there are some remarkable statements: for example, on p. 52 we have it stated that iron obtained by "reducing the oxide with hydrogen [is] spontaneously inflammable, taking fire as soon as it comes into contact with the air." On the same page is this passage:—"Iron filings and sulphur, when mixed, unite readily, if they are simply moistened with water." Four pages further on it is stated that "Iron and oxygen unite with each other in the proportion of 56 to 32 parts by weight respectively, to form ferrous oxide." Curious to have three such errors with so common a thing as iron. On p. 124 sulphurous acid is given as $H_2S_2O_3$. The majority of the errors are slips, and do not materially affect the value of the book, which is one that we can confidently commend as suitable both for examination and business purposes.

Coca, Cocaine and its Salts: their History and Economic Uses and Medicinal Preparations. By William Martindale, F.C.S., &c. London: H. K. Lewis, 136 Gower Street, W.C. 1886. 8 + 69. Price 2s.

THIS arrangement in green and blue with a touch of gold tempts one to put Mr. Martindale down as one of the Whistler cult, and a first glance at the *brochure* is as soothing as one of the master's most daring arrangements. But after reading the pages in all conditions of light, we are inclined to thank the author for the opportunity of judging of the effects of

"blue ink on green paper." Such a combination is said to be admirable for the sight, and it really appears to be so; the printing can be read at a greater distance without straining—and when one closes the book there is in the eyes a sense of coolness and freedom from fatigue which is not experienced with the conventional black and white. The work itself is a striking proof of the rapidity with which a medicinal agent may acquire a rank of first importance. Two years ago cocaine was practically unknown, and the coca leaf had fallen almost into desuetude. Now after a brief period of craze for its universal application, the alkaloid turns out to be the most important medicinal acquisition of modern times. Mr. Martindale's booklet shows the flow of the tide. It is an interesting and useful compilation dealing mainly with the history and botany of the drug, to which he imparts some masterly touches of interest. The pharmacy and therapeutics of coca and cocaine are fully and succinctly treated, and the widely scattered references are focussed in a concluding chapter. As frontispiece a well executed coloured lithograph of the foliage, flowers, and fruit of coca is given.

GUIDE TO THE COLONIAL AND INDIAN EXHIBITION.—With the sanction and support of the High Commissioner for Canada, the Agents-General for New South Wales, Victoria, South Australia, Queensland, New Zealand, and the Cape Colony, and the Royal Commissioner for the West Indies, there will be published in May next, by the proprietors of the *European Mail* and the *Colonies and India*, a penny guide to the Colonial and Indian Exhibition. The book will consist of not less than sixty pages, quarto size, and, in addition to a very full account of the several exhibits, there will be illustrations of the principal Courts, photographs of the President of the Royal Commission—H.R.H. the Prince of Wales—and the Secretary, Sir Philip Cunliffe Owen, and a sketch plan of the exhibition building and grounds.

THE CHEMICAL SOCIETY have just issued to their fellows a new catalogue of their library. This catalogue is most carefully classified, and is, besides, much increased in value by two indices, one of authors and one of subjects. It occupies altogether 327 octavo pages.

Obituary.

BAINES.—On February 16, Mr. Richard Baines, chemist and druggist, Blackburn. Aged 70.

BETTS.—On March 14, Mr. William Elliot Betts, chemist and druggist, Liverpool. Aged 69.

DREW.—On March 20, Mr. John Drew, chemist and druggist, Pershore. Aged 67.

HALLSWORTH.—On March 2, Mr. Thomas Hallsworth, chemist and druggist, Ancoats. Aged 67.

KIRK.—On March 5, Mr. William Kirk, chemist and druggist, York. Aged 56.

NEALE.—On March 9, Mr. Thomas Neale, chemist and druggist, Sherston Magna. Aged 62.

NEUJEAN.—On March 27, Madame Joséphine Neujean, wife of M. Alexandre Neujean, ingénieur-chimiste, Liège, Belgium.

PARKER.—On March 18, Mr. George Parker, chemist and druggist, Wardour Street, London. Aged 75.

PARRISH.—On March 2, Mr. Edward James Parrish, chemist and druggist, Maidstone. Aged 47.

WHITNEY.—On March 9, Mr. Sidney Francis Whitney, chemist and druggist, Paddington, London. Aged 29.

MARRIAGE.

BREIDENBACH.—RICHARDS.—On March 22, at St. George's, Hanover Square, Reginald Blackwell, youngest son of the late Franz Heinrich Breidenbach, of New Bond Street, London, to Amy Elizabeth, only daughter of the late William Frederick Richards, of London.

Medical Gleanings.

MEDICINE MISAPPLIED.

"A LITTLE light Madeira and gentle carriage exercise," was the West-End physician's prescription to a poor patient whom he was asked to call upon by a rich patron. The story is now proverbial, and is only quoted here to introduce a warm protest by an Irish physician against the growing practice of inappropriate medication. In the course of a discussion on pneumonia which he had opened, Dr. Martin (Portlaw) said that it was of the utmost importance to teach young practitioners some of the good old-fashioned methods. They were apt to forget the position of the patient sometimes; for example, in inducing profuse perspiration by the use of jaborandi, where the patient might be possessed only of a piece of a quilt and a torn shirt, so that the reaction left him worse than before. (*British Medical Journal*, p. 596.) This is a forcible and a typical case, and it is to be hoped that the moral will be taken to heart by young practitioners. There is another direction in which some prescribers are inclined to err—namely, in ordering expensive forms of a recognised remedy for comparatively poor patients. Digitaline granules are not the physic for a working-man; nor So-and-so's compound, at 1s. 6d. or 2s. an ounce dose, a teaspoonful thrice daily; but such prescriptions are not uncommon nowadays. Of course it has been always thus more or less; but how much better is it for the prescriber—and we know that there are many of the kind—to give a poor man a chart of simple dietary and an inexpensive but effectual drug.

FEHLING'S SOLUTION FOR DIABETIC URINE.

VARIOUS devices have been proposed to overcome the proneness of Fehling's solution to decompose rapidly, and some are undoubtedly successful. Mr. F. Cresswell (late of St. Bartholomew's Hospital) now proposes to leave out the potassium tartrate, and to put glycerine in its place. The formula which he gives (*British Medical Journal*, p. 587) is—copper sulphate, 35 grams; glycerine, 200 cc.; water, 100 cc. Dissolve, and add to a solution of caustic soda, 80 grams in 400 cc. of water, and boil for 15 minutes. Then dilute with water to 1 litre, and allow to stand until clear. During boiling there is a partial reduction of the copper salt, but Mr. Cresswell prefers this to be done at once rather than have the solution decreasing in strength little by little. Necessarily, a certain and unknown amount of decomposition having been effected, the solution must be standardised, and perhaps further diluted. The author states that he has had some of the solution in his possession four or five years, without any signs of decomposition. For those who have not done sugar estimation, we may repeat here the manner in which the solution is standardised: 10 cc. of the Fehling and 50 cc. of water are placed in a flask and heated to boiling; while this is going on a burette is filled with a solution of grape sugar (as pure as possible) of definite strength—say, 1 in 200. When the contents of the flask are at the boil, the sugar solution is run in slowly but steadily until, on the precipitate subsiding, the supernatant solution is free from blue colour; the temperature of the solution must be maintained during the operation. A preliminary experiment affords a rough idea of the amount of sugar solution required, and in a second and third experiment somewhat less than this is to be added at once, the contents of the flask reboiled, and then any more sugar solution required is to be cautiously added, until the end point is reached. A simple calculation gives the sugar value of the Fehling's solution. Diabetic urine should always be much diluted, 1 part of urine and 9 of water being suitable proportions. This is one of the fields in which the chemist and druggist may relieve the medical man, and it is worth cultivation.

INHALATION AND INHALERS.

IN our last issue we referred to what may be considered doubtful applications of remedies by inhalation. It so happens that in the corresponding issue of the *Lancet* (p. 586) is printed a critical paper by Dr. W. H. Blenkinsop, read before the Harveian Society. With inhalation Dr. Blenkinsop conveniently includes vaporisation and fumigation. All these, and the means of producing them, are dis-

cussed, and the general conclusions are that present methods are more or less imperfect. Steam inhalations are so because they charge the lungs with an undue amount of aqueous vapour, which soddens the mucous membrane, and the calibre of the air tubes is so lessened that urgent dyspnoea is the result. Fumigation is bad, because it tends to produce headache, derangements of the digestive organs, and annoyance to other than the immediate sufferer. He concludes that hot air inhalations are best. These he defines as "dry medicated vapour," resulting from "volatilising powders or tinctures, or by burning medicinal herbs in a suitable apparatus, and without the aid of steam." The statement that vapours of tinctures are *dry* may be questioned, but does not vitally affect the author's case. It will not be denied that if remedies by inhalation are to be beneficial at all they should be *so per se*. The greater part of this paper is taken up with remarks on inhalers, of which there are many before the public, but not one which comes up quite to the doctor's ideal, and he has therefore found it necessary to invent one himself. In the majority of known inhalers, he says, "the natural mode of respiration, solely through the nostrils, is perverted, and in a manner reversed; and patients are directed to go through the not very easy performance—which, happily for themselves, they are as a rule unable to attempt—of drawing the medication into the mouth by a deep inspiration and expiring it through the nostrils!" Dr. Blenkinsop's own inhaler consists of a vessel in which a spirit-lamp is fitted; over this is a chamber fitted into a cover; the chamber is warmed by the lamp, and is suitably connected with the outer air; attached to it is a flexible tube, to which is fitted a mask to cover mouth and nose. This mask appears to be after the principle of Dr. Hunter Mackenzie's antiseptic inhaler, though Dr. Blenkinsop does not say so. "Further details will be provided later on by the manufacturer." The author believes that inhalents are best used in combination, and that "most drugs in the Pharmacopœia can, with due precautions and a suitable apparatus, be inhaled with advantage." "Most drugs" is rather a wide range.

COCAINE.

THE New York Medical Society is preparing a bill which would include cocaine in the list of medicines which can only be sold by a physician's prescription. A popular paste composed of coca-leaves and lime has occasioned this action. It was in great demand (*Brit. Med. Journ.* p. 614).

In Sheffield lately a woman of 35 took a dose of carbolic acid instead of a mixture. She does not appear to have swallowed any, but she presented various symptoms of carbolic-acid poisoning, and suffered great pain in the throat and larynx. The pain was greatly relieved by 1-16 grain doses of cocaine hydrochlorate every three hours.

Painful defecation is prevented by the application of a solution of cocaine. Perhaps cocaine suppositories may be serviceable, and are worth trial.

BRASSFOUNDER'S AGUE.

At a recent meeting of the Midland Medical Society Dr. Suckling showed a case of this disease. The patient was a man who had worked in brass for twenty-six years. He presented the characteristic marks of cuprism, such as green-tinted hair, and a green line on the teeth, close to the gums. Whenever a casting was made in the workshop the fumes powerfully affected the man, causing him to shiver and perspire, and frequently he vomited. Bronchial catarrh generally accompanied these symptoms, which were relieved by potassium iodide. This disease is somewhat common in the Midlands.

BELLADONNA-POISONING.

In the *British Medical Journal* (p. 589) are notes of a case of belladonna-poisoning which had a fatal termination six hours after the poison (*Lin. Belladonna*, B.P.) was swallowed. The deceased was a strong girl of 16. She had taken the poison at 3 P.M., but it was fully four hours later before this was definitely ascertained by the hospital authorities; and until the fact was known opinion was divided as to whether the poison was chloroform or belladonna liniment. Vomiting was produced, the stomach thoroughly washed out, and the faradaic current was applied. As soon as it was known that belladonna was the poison, two-thirds of a grain of pilocarpine was injected subcutaneously; this produced a slight

improvement but it was not long maintained, and an hour later another half-grain of pilocarpine was used, as well as stimulants, but the patient died. The remarkable feature about this case is that there should have been any doubt that the poison was not chloroform—surely the patient's breath and the vomit would have told that. It is also remarkable that though there are several bodies antagonistic physiologically to belladonna, we do not seem to have yet secured a reliable antidote. Now that physostigmine can be obtained in a pure state, it might be experimented with. Most failures have been through the use of worthless extract of calabar-bean. The whole subject of antidotes requires careful revisal; much of our knowledge has come to us by tradition, and what we do have seems to be applied in a very unmethodical sort of a way.

TEREBENE *versus* PURE TEREBENE.

DR. FRANCIS T. BOND communicates a long and controversial letter to the *British Medical Journal* (p. 616) on terebene. The letter contains some very caustic remarks on the "pure" article and its introducer, Dr. William Murrell. We care not to enter into the dispute; all that we have to say, and all that our readers have to keep in mind at the dispensing-counter is, that the "pure terebene" recommended by Dr. Murrell was not Dr. Bond's terebene. Equally we do not care to hide the fact that long before Dr. Murrell turned his attention to the cure of winter cough by means of pure terebene, Dr. Bond's terebene had been tried for similar and other purposes, and was an established article of sale. As to its value, here is a remarkable and amusing testimony, communicated to the same journal by Dr. Colin G. Campbell. He had recommended it as a disinfectant, and got the following letter from the patient's sister shortly after:—

"Don't you think that you should have cautioned my parents as to the increase in their butcher's bills when you told us to try terebene? My sister took double the quantity of food. Nurse said, Since you have used that stuff, I eat as much at one meal as I used to eat in a day, and quite enjoy it. It must have some magical effect."

DISGUIISING THE TASTE OF QUININE.—Professor Hugo Engel has accidentally discovered (*Med. & Surg. Rep.*, p. 278) that in the following combination the taste of quinine is completely disguised:—

	Grains					
Quiniae sulphatis	1
Ammoniae chloridi	1
Pulv. glycyrrhizae	4

M. fiat pulvis.

Larger doses may be given with the same proportion of liquorice and ammonium chloride, but it does not appear necessary to increase the liquorice so much, 10 grains being sufficient for 10 grains of quinine.

THE "LANCET" ON THE SALE OF POISONS.—We understand that it is the intention of the Government to propose a revision of the regulations affecting the sale of poisons. It is generally admitted that the Act as at present administered is unsatisfactory, inasmuch as the list of articles included in the Schedule of Poisons is singularly incomplete, whilst the formalities connected with the retailing of certain popular poisons, which it would be superfluous to name, are practically inoperative. The question of including nitro-glycerine in the list of prohibited articles has for some time past occupied the attention of the Crown. It is universally recognised that it is a most valuable medicinal agent, but it must be admitted that its introduction into the British Pharmacopœia in the form of a sweetmeat was an egregious blunder. Either the 1 per cent. alcoholic solution, which is in constant use by medical men, will have to be substituted for the objectionable and dangerous chocolate drop now so commonly advertised as a popular remedy for neuralgia and sea-sickness, or its indiscriminate sale to the general public will have to be restricted. The other articles proposed to be added to the list are lobelia, nitro-benzol, savin, and their preparations, together with the soluble oxalates. It is a remarkable fact, in view of certain recent legal proceedings, that chloroform is not mentioned. On the other hand, the frequent fatalities following the unrestricted use of carbolic acid as a disinfectant have not escaped notice, and the necessity for including it in the second part of the schedule is again being forced on the attention of the Privy Council.

BANKRUPTCIES.

JOHN BETHIELL & Co., of West Bromwich, Bradford, near Manchester; Kingsend, Dublin; North Wall, Dublin; and Great Grimsby and London, Tar-distillers and Creasoters of Timber.

At the London Bankruptcy Court on March 29, an application was made to Mr. Harding, Chief Official Receiver, for the appointment of a special manager of the business of these debtors. The liabilities are stated at upwards of 50,000*l.* against probable assets estimated at about 25,000*l.*, and the debtors attribute their failure chiefly to losses arising from contracts entered into with certain gas companies who were to supply the firm with tar for the manufacture of chemical products. Mr. Bowen (Bowen & Co.) applied for the appointment of Mr. Henry Bishop (Turquand, Young & Co.), and stated that it was important that the materials upon the premises should be used up. The chairman said that the failure was brought about by reason of the unprofitable contracts with the gas companies who were to supply the tar from which the debtors manufactured the chemical products. Owing to the falling markets those contracts appeared to have been carried on of late at a considerable loss, and he certainly would not give permission to continue to carry on those contracts. It appeared to him that the first thing that would have to be done would be to disclaim them. Mr. Bowen said that there was no doubt that the contracts had been carried on at considerable loss, and but for that loss the debtors would not be in their present position. It was not proposed in any way to deal with the contracts, but merely to use up such material as was now upon the premises of the debtors. The chairman said that under those circumstances, he saw no reason for refusing the application, and accordingly appointed Mr. Henry Bishop (Turquand, Young & Co.) special manager of the business.

GRANT McDONALD, 3 Broadway, Ludgate Hill, Medicine-vendor.

In the London Bankruptcy Court on March 25, before Mr. Registrar Hazlett, this debtor applied to be allowed to pass his public examination on accounts showing liabilities of 1,125*l.* 10*s.* and assets 10*s.* The debtor was a manufacturer of porpoise-liver oil. In reply to Mr. Tanner, the official solicitor, he said he commenced business as a medicine-vendor two and a half years ago without any capital, and the main cause of his failure was the expense of advertising the medicines, which he had not paid. He failed in 1866, but had been solvent since then. He admitted he had not been solvent, however, during the last five years, the knowledge that he was not so having been brought to his notice by his inability to pay a solicitor's bill. The examination was adjourned till April 8.

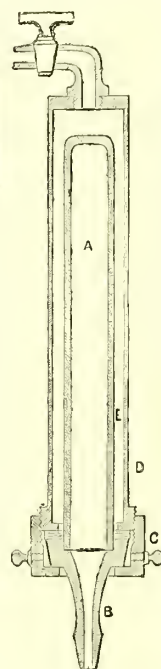
THOMAS SALMON, Denbigh, Chemist and Druggist.

ON Tuesday last a meeting of the creditors of Thomas Salmon, 51 Vale Street, Denbigh, chemist and druggist, was held at the Official Receiver's office, Eastgate Row, Chester. The liabilities of the debtor amounted to 496*l.* 15*s.*, whilst the assets, according to the statement, amounted to 302*l.* 17*s.* 6*d.*, but at the meeting it was found that this latter sum would be somewhat reduced. The alleged causes of the failure were heavy expenses, bad trade, excessive rent, and heavy legal expenses. The Receiver observed that the debtor had been nearly six years in business, and had only 85*l.* as capital when he commenced. Of the debts, 130*l.* was for money borrowed, the remainder being trade debts, but none to a large amount. It was resolved that the debtor be adjudicated a bankrupt, the assets being found to be under 300*l.*, and that the Official Receiver apply to the Court for an order for the summary administration of the estate. An offer of 5*s.* in the pound, payable by instalments and guaranteed, was not accepted.



THE CHAMBERLAND-PASTEUR FILTER.

THE association of the great French chemist's name with any article in common use should at the present time have in itself a certain market value, and the case is so, we have no doubt, with the Chamberland-Pasteur filter, which, however, has certain features about it that command attention.

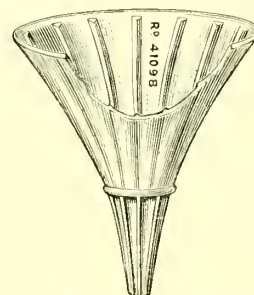


The construction of this filter is quite different from any other we have noticed. In the figure we show the simplest form of the filter attached to an ordinary domestic water-tap. A in the figure is a tube of porous porcelain, about 1 inch diameter and 8 inches long at the unglazed part. This is fitted into an incorrodible metal cylinder, which in its turn is screwed on the water-tap, an indiarubber washer at the bottom makes the connection between the outer and inner tubes very intimate, so that the apparatus is perfectly air-tight, and when the water is turned on it immediately begins to trickle through the orifice B. The construction of the filter-tube is such that in a small space a large filtering-surface (namely 25 inches) is afforded, one tube filtering from 6 to 12 gallons of water per day. The capabilities of larger filters, such as one with 21 tubes, may be judged from this. In these the tubes are fitted into strong copper or nickel cylinders capable of withstanding high pressures. The filtering medium is very effective and removes all suspended impurities—it is not claimed to do more—which are deposited entirely on

the outside. It is also suitable for filtering other liquids than water, such as wine and beer, and we believe that there is use for it in large pharmacies for filtration of tinctures and the like. It is not suited for viscous fluids. Necessarily loss of spirit by evaporation is reduced to a minimum with this apparatus.

A NEW FUNNEL.

WE have had submitted for our inspection one of Messrs Lynch & Co.'s patent funnels. This has on the inside the well-known ridges which so greatly assist filtration; and the same idea has been carried out on the outside of the stem.



Most of our readers will have experienced the annoyance from want of some provision of this kind. Odd bits of straw and string will no longer be in it. Mr. Charles Umney, as a pharmacist, generally succeeds in getting hold of the good things, and he considers that this funnel is excellent.

Trade Notes.

THE "Sovereign" Tooth Brush, made by Bidwell Brothers, Axminster, is made of specially selected bristle, which, though unbleached, is remarkably free from colour. The brush is a strong and well-finished article. A full supply of counter-bills and envelopes is sent out with each dozen-box, which is appropriately and handsomely labelled.

**

MESSRS. BOURNE JOHNSON & LATIMER'S new illustrated Price List is full of useful references, arranged in a convenient way. We notice some illustrations of saleable articles that are not usually given in such price-lists, and which should be valuable to country chemists. The volume is well got up, and has a durable binding.

**

MESSRS. EVANS SONS & CO. have secured the sole right to use Laycock's Patent Feeding Bottle Stopper, which is made of solid boxwood, and have fitted it to several kinds of Savar's 6d. and 1s. feeders. With this stopper the bottle can be made perfectly air-tight, and thus prevent leakage when not in use, yet by a slight turn of the stopper the contents become available. This is a manifest improvement.

**

MESSRS. MAWSON & SWAN'S New Filters, in which it will be remembered the filtering-medium is arranged in strata of different degrees of fineness, separated and held in position by layers of glass-wool with a movable plate, have obtained quite a remarkable testimony from Mr. T. Hatfield Walker, L.R.C.P., F.R.M.S., F.C.S., &c. of Carlisle. On the strength of a series of chemical and biological experiments, this analyst asserts, first, that these filters reduce the organic impurity in water to about one-eighth of the original amount, and almost entirely remove all bacterial germs. Thus a water which contained 5 grains of nitrogenous organic matter, after being filtered was found to contain only half a grain, and a very bad water of very offensive odour, and which contained 12 grains of organic matter, after filtration was found to contain 1.4 grain, and was rendered perfectly sweet. Moreover, Mr. Walker says that these filters not only separate organic matter, but will almost entirely remove from water the salts which give it "hardness." Thus a water having 22 degrees of hardness was found after filtration to have only one degree. Newcastle water, which has a hardness of 16 degrees, after filtration was found to have only 0.9 degree. On analysis, a water containing 6 grains of bicarbonate of lime and 2 of bicarbonate of magnesia was found after filtration not to contain a trace of either. These results are certainly striking.

Veterinary Pharmacy.

HOOSE IN CALVES.

"HOOSE," or "husk," being caused by a parasite in the smaller bronchi, is best treated by inhalations. A perfectly safe and effectual method is the following:—Having secured the subjects in a shed, mix a quantity of hot bran and put about a gallon in an ordinary nosebag with buckle and strap; then pour into the bran a sixth part of the mixture below, stirring the bran and adding a fresh quantum for each calf until six have been done; then throw it away and begin again. About two minutes is sufficient for each animal, and it should be repeated in a week or ten days. A dose each should be given of the following:—

For the Inhalation.

Acid carbolic	..	..	..	..	..	5iv.
Ol. terebinth	..	..	..	..	..	3i.
Glycerine ad	..	..	..	..	..	3vj.
M. ft. inhalat.						

Draught for Internal Use.

Tinct. asafoet.	..	..	..	..	..	5ij.
Ol. terebinth	..	..	..	..	..	5ij.
Ol. lini, ad..	..	..	..	..	..	3iv.
3l. ft. haust.						

Trade Report.

It should always be remembered that prices quoted in this section are as nearly as can be ascertained the lowest that are actually paid for bulk quantities. Considerable allowances have to be added in many cases before ordinary prices can be ascertained, and for many drugs it must be recollected the range of quality is very wide.

MINCING LANE, April 2, 1886.

ACIDS.—Citric is easier, the quotation for spot being 2s. $\frac{1}{2}$ d. per lb., although makers still adhere to the price of 2s. 4d. per lb. Tartaric unchanged for English, but rather weaker for foreign, the nearest value for the latter now being 1s. 8d. per lb. Oxalic neglected at unchanged rates.

ALOES.—There was a total supply offered of 506 packages, the greater half being Curaçao, of which 102 boxes sold, partly without reserve, at 20s. to 26s. for very low to ordinary partly burnt liver, and 36s. to 75s. for dark to good ditto; 95 boxes Cape partly sold at about 1s. to 1s. 6d. easier rates, viz. 22s 6d. to 31s. for ordinary drossy to good hard. Good E. I. Socotrine bought in at 8l. per cwt.

AMBERGRIS.—One tin fair quality, but of rather soapy flavour, bought in at 70s. nominally.

ANNATTO.—Of 6 packages seed, one barrel (small but very bright) realised 4d. per lb., the remainder, not so good, being held at 3d. to 4d. One case flour bought in at 5d., and one case bright, soft paste at 1s. 6d. 49 baskets very fine moist Brazilian roll found no buyers at 2s. per lb. A short time ago a parcel of similar quality was eagerly bought at 2s. 2d. to 2s. 3d. per lb.

BALSAMS.—Four cases Capivi of rather old import bought in at 1s. 5d. per lb. Of Peruvian, 6 cases were offered, and bought in at 5s. 8d. to 6s.; one jar sediment, at 5s. per lb.

BEANS.—3 bags good Calabar are held at 5 $\frac{1}{2}$ d. per lb.; 22 cases Tonquin found no buyers, and were withdrawn at 1s. 8d. to 2s. 6d. for low foxy to fairly good dark Pará character. One bag Ignatius beans taken out.

BUCHA-LEAVES.—36 bales, mostly round, bought in at 3 $\frac{1}{2}$ d. for good green round, 10d. to 1s. 9d. for good long narrow.

CAMOMILE FLOWERS.—6 bales good but small pale seconds bought sold at 50s. to 51s.

CAMPHOR.—205 tubs fairly dry Japan sold at 67s. per cwt.

CANELLA ALBA.—2 cases of old import, mostly broken, partly fair quill, realised 42s. per cwt.—a high price.

CANTHARIDES.—The demand has slackened considerably, and in to-day's sale none were sold; 10 boxes China, partly very small and broken, at a nominal figure; while 5 casks good Russian flies are held at 7s. 3d. per lb.

CARDAMOMS.—The supply of 224 boxes, a total smaller than has been offered for some time, went off at somewhat irregular, but, on the whole, dearer prices, Mangalore selling at 3s. to 3s. 1d. for medium to bold, smooth pale, but rather skinny, this being a very full price; 2s. 5d. to 2s. 9d. for dampish, small to medium sized, rather dull pods, to fine pale bold ditto; Ceylon Malabar, 2s. 8d. to 2s. 11d. for good, medium to bold, full, to fine bold pale pods; 1s. 11d. to 2s. 5d. for small pale to bold, but slightly specky; 1s. 2d. to 1s. 5d. for small shelly to medium; Alleppey, dark lean and shelly to fairly bold unclipped, 1s. 1d. to 1s. 8d.; seeds, 1s. 5d. to 1s. 6d.

CASCARA SAGRADA.—4 bales sold at 31s. to 35s.

CASTORUM.—One bag very good bold pods held at 34s. per lb.

CHEMICALS.—Messrs. Howards & Sons inform us that there is a good inquiry for Hyppone. The following articles have lately declined in value, and are now quoted as follows:—Calomel 2s. 6d., Camphor bello 1s., flowers 10 $\frac{1}{2}$ d. to 1s. 1 $\frac{1}{2}$ d., Cocaine in 1 gramme tubes 1s. 6d., in 10 gramme vials 1s. 5d., Hydrargyri oxid. rubrum and prop. 2s. 9d., Hydrarg. ammoniatum 2s. 9d., Magnesia carbonas ponderosa 65s. 6d., Morphinae acetat 4s., hydrochloras 4s., sulphas 4s. 6d., Potassii bromid. 1s. 6d., Terebene 2s. 2d., Urethane in 1-oz. vials 1s. 10 $\frac{1}{2}$ d.

CHEMICALS (VARIOUS).—*Nitrate of Soda* remains steady at 11l. 5s. *Borax* quoted at 30l. for English. *Bleaching Powder* firm at 7l. ex-warehouse. *Cream of Tartar* offered at 125l. ex-warehouse. *Bichromate of Potash* lifeless at 3½d. *Soda Bicarbonate* firm at 7l. 12s. 6d. ex-warehouse.

CHIRETTA.—A parcel of 48 bales low, very dark, stoutish to partly very thin stem, which has been repeatedly offered in sale, was now knocked down at ¾d. per lb., without reserve.

CINCHONA BARK.—The supply of 312 packages consisted for about one-third of *Crown* and an equal quantity of flat *Calisaya* bark. 51 small bales of the latter variety were sold mostly for export to the Continent at full prices and with good competition; fine bright coated, fairly free of outer bark at 2s. 3d.; hard, thin, small to medium, sound at 2s. 1d. to 2s. 2d.; ditto, first to third class country damaged at 1s. 10d. to 2s.; dull to soft at 1s. 3d. to 1s. 6d. Of *Crown* bark only a few lots Guayaquil were sold, dull broken, to very good thin silvery quill at 6d. to 1s. 1d. A parcel of 9 cases good brown to very fine, stout, heavy, silvery quill *Calisaya* bought in at 2s. to 3s. 6d., with the exception of one case which realised 2s. 4d. per lb.; 3 cases *Ceylon Succirubra* small broken partly silvery quills, country damaged, realised 9½d. per lb.; 17 packages thin, partly broken *Java* quill bought in at 1s. to 1s. 6d.; 40 bales *Maracaibo* also bought in at 6d. per lb.

CITRONS.—5 pipes salted, Las Palmas, held at 105s. per pipe.

COCA LEAVES.—No purchasers appearing, the 36 bales offered to-day were all bought in at 1s. to 1s. 9d. for mixed Iuanoco to small pale Truxillo; some lots are held at 1s. 6d. to 2s. for bold but broken dark Iuanoco to thin palish Truxillo.

COCULUS INDICUS.—17 bags very low quality, although offered for sale without reserve, failed to attract a buyer.

COLOCYNTH neglected. 16 packages Turkey partly dull, broken, and very seedy, partly fairly good apple, bought in. 12 cases discoloured rubbish found a buyer at 1d. per lb.

CUTTLE FISH.—26 packages small to bold, but rather broken and discoloured, bought in at 1½d. per lb.

ERGOT OF RYE.—Easier. Of 22 packages, one barrel and one bag medium to good Spanish sold at 1s. and 1s. 6d. respectively.

ESSENTIAL OILS.—*Bergamot.*—Orders from America have kept up the price. *Cinnamon.*—3 cases rubbish sold at 2d. *Citronella.*—A fairly large supply. 167 cases in all were offered, about one half being without reserve, but there was no desire to buy, although it would appear that 77 cases found purchasers at 1d. to 1½d. per oz. *Ginger Grass.*—3 bottles low sediment sold at 2½d. per oz. *Lemon.*—There has been very little doing in this article since our last; but the stock is limited and in firm hands. In sale 12 jars all bought in; low quality of old import at 4s. to 4s. 9d.; 5 jars freshly imported at 8s. per lb. *Lemon Grass.*—3 cases just arrived via New York, held at 2s. per oz. *Limes.*—1 case bought in at 6s. per lb. nominally. *Otto of Roses.*—8 vases which have been offered several times before now again failed to find purchasers. *Orange.*—There has been a good demand from America, and prices are well maintained. *Peppermint.*—8 cases Cocking's double refined Japanese bought in at 12s. 6d. per lb., and 1 case of no stated brand at 12s. per lb. The stock of Mitcham is now said to be getting very low; quotations for this variety are 38s. for double rectified, 37s. for rectified, and 35s. for non-rectified. *Pimento.*—3 tins old stuff bought in at 3s. 3d. per lb. nominally. *Wintergreen.*—1 case held at 8s. 6d. per lb. *Ylang Ylang.*—The 29 bottles offered consisted nearly all of medium to low qualities, and were bought in at nominal figures.

GALLS.—508 bags Turkey were catalogued, but a good proportion of these was reported sold prior to the auction. Of those actually offered only 15 bags blue, mostly badly sea-damaged, realised 52s. to 55s.; sweepings, 48s. per cwt.

GUARANA.—A single case just imported was bought in at 8s. per lb.

GUAZA.—84 robbins were offered, one half of these very dry dusty, partly badly sea-damaged, which were bought in; and 44 robbins broken leaf and stalks, containing a good

proportion of dust, and partly damaged, which realised 3¾d. per lb.

GUINEA GRAINS.—28 bags low quality sold without reserve at 14s. to 14s. 6d.

GUMS.—Of *Ammoniacum* nothing was sold. In *Arabic* there has been little doing since the last sales. Of Turkey a fair assortment was offered to-day, but only a few packages sold, viz. 1 case dust at 26s. and 1 case dusty sorts at 10l., an offer of 8l. 7s. 6d. for 3 cases good siftings not being accepted. Amrad is quoted 80s., 85s., with retail sales. Brown Barbary is still quite nominal in the absence of supplies. The parcels of Cape offered met but little demand, and only partly sold, blocky brown at 65s. per cwt. In Senegal we do not hear of any sales, as dealers do not care to increase their stock. *Benjamin.* In all 93 cases were offered, a fair proportion of these being Siam, but by far the greater part of the supply was bought in owing to want of competition. One case very fine bold loose first Siam almonds fetched 36l., the remainder of the Siam bought in, fine; partly loose, partly blocky second almonds at 30l., for dull blocky partly loose third grain 15l. is asked. Of Sumatra, 10 cases second, fair almondy to badly false-packed sold at 8l. 10s. to 5l. 7s. 6d.; some lots very good almondy firsts are held at 15l., and 6 cases fair Palembang at 6l. 10s. per cwt. *Dragonsblood* sold well; good bright pipe in reed at 8l.; ditto, cakes out of reed at 6l. Of *Elemi* 90 cases failed to induce business; 40s. is asked for good whitish quality. *Galbanum*, 1 case partly small drops, partly blocky grain bought in at 1s. 8d. per lb. Out of 24 cases *Gamboge* only 2 sold, good pipe, partly blocked but of bright colour at 13l., blocky and broken pickings of dull colour at 10l. 15s. *Mastic* neglected, and none sold. *Myrrh*, 50 cases were catalogued, of which 10 consisted of common blocky Bdelium, which fetched 15s. to 21s. per cwt. Very good pale picked, small to bold, was bought in at 8l.; good siftings at 5l.; woody pickings at 80s. per cwt. *Sandarac* neglected, 15 casks all bought in at nominal prices.

HONEY.—There was a good supply, the bulk consisting of Californian, of which 545 cases; a further instalment of the arrivals which came to hand last autumn was sold without reserve at lower rates, viz. 16s. to 23s.; 14 cases fine pale realising 25s.; 8 barrels pale brown Jamaica sold at 31s. The rest bought in, pale brown Caracas at 28s.

INSECT FLOWERS.—Two bales, each weighing 4 cwt., yellow Dalmatian flowers; well preserved were bought in at 110s. The article is said to be very scarce.

IPECACUANHA.—There was a large supply (98 serons), of which a fair proportion was sold at a decline of 2d. to 3d. per lb.; thin, wiry, mouldy to fair ditto at 2s. 11d. to 3s. 6d.; good stout, slightly damaged at 3s. 7d. to 3s. 8d., sound at 3s. 9d. One seron very fine picked, short and well-annulated root was bought in at 4s. 8d. per lb.

ISINGLASS.—In sale 528 packages were offered and partly sold at irregular prices, viz. *Brazil* at 8d. for Pará pickings, to 4s. 7d. for good Pará tongue, being mostly cheaper; *West India* low red to good 2s. 2d. to 2s. 10d. or dearer; *Penang* low dark cake to fine stout tongue, 7d. to 3s. 8d., the latter being a full price; *Bombay* low dark cake to fine bright fresh tongue 1½d. to 3s. 2d., the former cheaper the latter firm; *Sripong* skinny tongue to superior stout leaf 1s. to 4s. 3d., steady on the whole; low-pressed *China* leaf 1s., this variety meeting with little inquiry; *Hudson's Bay* at 3s.; *Russian*, no sales effected, purse being bought in at 8s., *Sincery book* at 2s. 4d. Sales will again be held on April 30.

JALAP.—7 bales sold at 7½d. per lb.

KAMALA quite neglected; 10 cases bought in; 7d. per lb., being probably nearest value.

KOLA NUTS.—For 3 boxes West Indian 6d. is asked.

MENTHOL.—One case small, rather damp crystals bought in at 12s. per lb.

MUSK.—Of *Tonquin* pod 37 caddies were offered, among them not one of really fine quality. The prices realised were: First pile, small to bold plump pods, good shape, well-trimmed, but dampish, good yielding 65s.; medium to bold pods, skinny but fairly dry 65s. to 66s.; small to bold pods, well trimmed, fair shape, good yielding, and dry, 68s., third pile; very false packed and skinny, 19s.; ditto, un-

sightly, 18s.; trimmings, 10d. to 11d.; *Yunnan*, small to bold pods, rather unsightly and dampish, about one-third false packed, 38s. to 38s. 6d.; *Cubardine*, one tin fairly good china pods at 11s. Of *grain* musk there was a good quantity, chiefly remarkable for the absence of musk in some parcels, witness 7 tins, which were sold at 5s. per oz., the bidding starting from 6d.

NUX VOMICA.—40 bags good Bombay sold at 12s.

OILS.—Of *Castor* 260 cases were offered; 50 tins fine pale first J. B. in rusty tins fetching 3½d. to 3¾d. without reserve. *Cod Liver* was also sold without reserve; 35 casks yellow to pale Newfoundland at 2s. to 2s. 2d.; 4 casks pale Norwegian at 2s. 2d.

ORANGE PEEL remains neglected. There was a supply of 82 packages, of which only 3 were sold. *Malta*, dull, machine cut, narrow strips, at 9d. 20 bags, new *Seville* bought in at 1s. 4d. for fine bright ribbon to 9d. for dull, small cut.

RHUBARB.—Of 142 chests catalogued, 51 were sold at firm prices for fairly bright, round *Shensi*, small to bold root, good fracture, which brought 2s. 9d. to 2s. 11d. per lb.; fair ditto sold at 2s. to 2s. 3d.; small inferior, of unsightly appearance, at 1s. 2d.; medium-sized flat and round mixed, very wormy and country damaged, at 8½d. *Canton*, flat, dull coated, wormy, realised 1s.; round, medium to bold, dark coated and wormy, 9d. to 10d. *High-dried*, very low, dark coated 8d. per lb.

ROOTS.—*Colombo*.—30 bags, fair, sold at 38s. to 40s.: 12 bags, good bright, bought in at 50s. per cwt. *Galangal*.—No inquiry. *Gentian*.—10 bales, partly dark, sold at 18s. per cwt. *Orris*.—10 serons, very low, damaged Mogadore, found no buyer. *Whitany*.—46 bales, nearly all of low quality, did not tempt buyers, no bids being forthcoming. *Scammony*.—Of 69 bales, which have been offered many times in vain, 20 were now taken at 38s. per cwt. *Seneca*.—14 bales bought in, at 2s. 2d. per lb.

SARSAPARILLA.—*Jamaica* sold well at firm prices, but *Honduras* and other varieties, generally bought for export, were neglected. The supply was large, numbering altogether 184 packages, of which the smaller part found buyers. *Jamaica* well bearded grey, at 1s. 8d. to 1s. 10d.; dull or badly sea-damaged red, at 1s. 2d.; good red, 1s. 5d. *Guayaquil* low pickings, at 3d.; ordinary, at 7d. to 8d.; dull *Honduras*, at 1s. 5d.; good crown being held at 1s. 8d. per lb.

SCAMMONY.—13 cases reported partly sold prior to auction.

SEEDS.—*Anis* still commands attention; little is left of our crops, while the greater portion of our consuming campaign is still before us. Russian sells at 28s. to 30s., Levant 30s. to 40s. per cwt. In sale to-day 107 bags were offered, but of these 62 consisted of spurious Japan, which remained unsold although 11s. was bid for them. 32 bags, dusty and stalky, realised 27s. to 28s. without reserve. *Caraway* continues to be offered by second-hand holders, but the demand is sufficiently strong to cope with these offers without any material reduction in value. Small grained seed is very scarce. In sale 10 bags stalky Mogadore held at 31s. *Croton*.—63 bags offered in sale met no demand and were bought in. The trade in *Canary* has been steady, although only on a small scale. Most of the orders to hand came from abroad, where the demand seems only scantily supplied.

We have hardly any fresh arrivals of seed to record, while for forward shipment a few parcels are being offered from Turkey at about our own prices. Holland keeps still too high for us to allow of importations. Of our stocks in Morocco seed fair quantities are moving off gradually, and fine Spanish seed commands fully last values. We quote ordinary Turkish 44s. 6d. to 46s., fine 48s. to 49s. 6d., Morocco 50s. to 55s., Dutch 51s. to 52s., Spanish up to 70s. per 464 lbs. ex warehouse. Of *Cumin* there was rather a full supply, viz., 167 packages, of which nothing could be sold at the limits. *Dill*.—20 bags offered without reserve sold at 8s. 6d. per cwt. *Fennel* is extremely quiet, no sales being recorded lately. The stocks of *Fenugreek* keep on increasing; there is a steady demand beginning to set in at a trifle under last quotations. 190 packages were offered in sale this day, but only a few bags sweepings, mixed with lentils sold at 1s. per cwt. *Musk*.—13 casks were catalogued, of which 5 casks West Indian sold at 7d. per lb. White *Mustard Seed* is becoming scarce, but there is an active demand for seed at moderate

prices. Brown Mustard: Californian 9s. per bushel, new Bombay 5s. 6d. per bushel. *Quince*.—6 barrels bought in.

SENNA.—109 bales *Tinevelly*, mostly of ordinary quality, partly sold at full rates; low dark medium-sized leaf, 1¼d.; partly dark, partly yellowish, 2¾d.; small, but greenish leaf, 3¾d. per lb.

SPICES.—The *Cinnamon* sales advertised for Monday last were cancelled owing to a dispute between the importers and the merchants. *Cloves* have again risen since our last, Zanzibar being now worth 7¾d. for fair; good Penang has been sold at 11¾d. to 1s. 0¼d. The deficiency in the present stock of *Cloves* is attributed to the non-arrival of Zanzibar descriptions, which are usually shipped freely during the first few months of the year. The present stock of all descriptions is 6,905 packages, against 10,672 at the same time last year. Since no failure is reported in the Zanzibar crop, it is questionable if the supplies are not being kept back in order to force up prices. On the other hand, prices of Penang cloves are exceptionally low, and the margin in price between the two qualities has seldom been so small as at the present time. *Cassia Lignea*.—Steady at 27s. *Nutmegs* and *Mace*.—Firm. *Pimento*.—Easy at 2½d. for good Jamaica. *Pepper*.—About ¼d. cheaper for black, dull for white. *Ginger*.—From 1s. to 3s. dearer and selling well.

SULPHATE OF AMMONIA.—Since our last report the market has toned down, and at present grey 24 per cent. is again quoted at 13½ 5s. in London, there is no business done at that price. The Hull quotation for the same quality has declined to 13½ 10s.

SULPHATE OF COPPER.—Steady at last quotations.

SULPHATE OF QUININE.—Quiet at unchanged prices except for German and Italian in bulk, for which makers now ask 2s. 9d., although there are second-hand sellers at 1d. under that figure.

VANILLOES.—333 tins nearly all sold at 2s. 6d. to 3s. lower prices, viz., 8 to 8½ inch at 23s., 7½ to 8 at 20s., 7 to 7½ at 17s., 7 at 16s., 6 to 6½ at 15s., 5½ to 7 at 11s. 6d. to 13s., 5 to 6 at 8s. 6d. to 9s., 4½ to 5 at 8s.

VANILLON.—12 tins loose beans, part dark, part foxy, bought in, nominally at 6s.

WAX.—Of Bees' there was a good supply, far exceeding the demand, which was slow, only a few lots being sold. Good white *Calcutta* at 7½, fairly good to good pale *Jamaica* at 6½ 12s. 6d. to 7½, partly drossy ditto at 6½ 5s. *Mauritius* partly dark to fair, reshipped from Boston, 92s. 6d. to 95s.

DRYSALTERIES.—So far as the business actually transacted is concerned, the public sales were dull in the extreme. Of *Canary Moss* two bales freshly imported were bought in at 30s. per cwt. *Cutch* has been rather quiet this week, and the quotations given in our last report remain unchanged. The shipments from Burmah to all parts, from January 1 to March 27, amount to 4,080 tons (2,300 tons to Europe), against 5,670 tons in 1885, and 4,690 tons in the same period in 1884. *Galls* are firm; China selling at 75s. In sale 75 cases small and very dusty Japan were bought in at the nominal price of 75s. per cwt. *Gambier* steady at 21s. per cwt. for good block, spot and forward delivery; a fair business in March-April delivery is reported at this price. In auction on Tuesday 48 bales fetched 20s. 6d. per cwt., while an almost equal quantity, partly broken in bales, partly loose, realised 20s. per cwt. *Lacdyne*.—The dulness of the sales was entertainingly diversified by a hubbub which arose when a parcel of 179 chests lacdyne in Messrs. Lewis & Peat's sale was reached, and which lasted for quite 25 minutes. It was evident, from the appearance of the room, that some dispute was anticipated, and expectations were not disappointed. So far as we have been able to ascertain, the cause of the trouble was as follows:—In 1878 the warehouse known as Butler's Wharf went into the hands of the present proprietors, and among the goods taken over by them was a parcel of several hundred chests of lacdyne imported in 1869. The warehouse rent on this parcel was paid until the year 1880, since when it has been accumulating until the present day; the wharfingers, it is said, having never been able to trace the holder of the warrants for the goods. The value of the lacdyne being meanwhile reduced to almost nil, and not at all equivalent to the charges on it, the proprietors of the Wharf, in sheer despair, are said to have ultimately made a present of 680 chests to

a well-known house in Mineing Lane. The remainder of the lot, viz. 179 chests, on which the total charges are put down at about 220*l.*, or 27*s.* 6*d.* per chest, were offered for sale on Tuesday by the Wharf. Objection to the sale being proceeded with was raised by several merchants and brokers present, on the ground that the actual marks of 26 cases ex Hartfell were not those catalogued, and that, when the would-be buyers presented themselves at the Wharf to inspect the goods the wharfingers declined to show them. The proprietors of Butler's Wharf, however, maintain that this is incorrect, and that the only reason why the goods were not shown was that they were not yet brought out, and the would-be buyers refused to wait until this was done. Ultimately the sale was postponed. We understand that the proprietors of Butler's Wharf will endeavour to ascertain who are the actual holders of the warrants, and in case they discover them will take proceedings for recovery of the rent, in order to settle the question, which appears to be undecided, whether the actual holder of the warrants is or is not responsible for all rent-charges due on the goods specified in the warrant. In some quarters the opinion is entertained that this question has already been decided in the affirmative; but considerable doubt prevails on the point.

Orchella Weed.—In the absence of buyers, 92 bags dull, dampish Zanzibar were bought in at 35*s.* per ewt. nominally. *Plumbago*.—Only 16 barrels dust sold at 5*s.* per ewt. *Seedlac*.—162 bags fairly clean Kurrahee bought in, only 34*s.* 6*d.* per ewt. being offered. *Shellac*.—Fine orange varieties are again 4*s.* to 5*s.* cheaper, but fair second orange of TN character, fairly well maintains last values. Button neglected, especially the lower sorts. In sale only 526 chests were offered, of which over one-half was catalogued as "without reserve," which may be considered the only reason that it was actually sold; the prices realised were:—Fine orange BSLS 64*s.*, DC 62*s.* to 63*s.*, fine second orange of old import, VSO 56*s.* to 57*s.*, Button, PB superior blood 68*s.*, CABL two common second 50*s.*, ditto x 3 mixed but fair third 40*s.* to 41*s.* PB.BL low resinous black 26*s.* *Turmeric* remains depressed, and only 52 bags rough, small, whole bulbs sold at 13*s.* 3*d.*

OILS.—The London quotations for *Cocunut Oil* remain unchanged, and the tone of market dull. *Linseed Oil* easier since our last report, the present quotations being on the spot here—pipes, land, 20*l.* 5*s.* to 20*l.* 7*s.* 6*d.*; barrels sold at 20*l.* 10*s.* to 20*l.* 12*s.* 6*d.*; April quoted 20*l.* 12*s.* 6*d.*; May-August, 20*l.* 2*s.* 6*d.* to 20*l.* 5*s.*; September-December, 19*l.* 12*s.* 6*d.* sellers. Hull, spot 19*l.* 17*s.* 6*d.*; barrels, 20*l.* 5*s.* to 20*l.* 7*s.* 6*d.*; April, 20*l.*; May-August, 20*l.* to 20*l.* 5*s.*; September-December, 19*l.* 15*s.* *Palm Oil*.—Fine Lagos obtainable at 23*l.* in London for quantities. *Olive Oil*.—The Liverpool market is quiet at unchanged prices; in London there has been more business done in Mogadore, which is firm at 33*l.* to 33*l.* 10*s.* *Rape Oil*.—English brown on the spot still rules at 21*l.*; March-April, 21*l.* 5*s.*; May-August, 21*l.* 10*s.*; September-December, 21*l.* 15*s.* Refined English on the spot, 22*l.* 10*s.* *Petroleum*.—A fair business is reported at prices somewhat below those of our last report—viz.: 51¹³/₁₆*d.* to 5¹/₂*d.* for spot; month, 51¹³/₁₆*d.*; September-December, 6¹/₈*d.* *Turpentine* has declined since our last report, and is now quoted for American spirit—spot, 28*s.* to 28*s.* 3*d.*; April, 28*s.* to 28*s.* 3*d.*; April-May, 28*s.*; September-December, 26*s.* 6*d.*

THE AMERICAN DRUG MARKET.

NEW YORK, March 23.

Compared with the corresponding period of last year, the amount of business doing in the home drug trade shows a great improvement, while the enquiry for export is the reverse; and although some of the leading American staple drugs are as low, if not lower, than ever known, orders are few and far between. Shippers at this side are anxiously looking for a revival of the European trade.

The prices sterling (in parentheses) are what the different articles would cost delivered in London, all market allowances, discounts, &c., being taken into account. Importers can, therefore, see at a glance the course of this market compared with their own.

ALOES CURAÇAO.—The stock of these aloes, all told, in first and second hand, amounts to about 1,500 boxes, and as

late arrivals brought only the low price of 5¹/₂*d.* (30*s.*) for common dark, shipments have fallen off, and it now remains to be seen whether it pays the producers to forward at such rates. The great bulk of the arrivals takes place in June and July. These aloes used to turn livery by keeping, but it now appears that owing to some change in the treatment of the juice, not nearly as many of the boxes turn as formerly. For *Aloin*-making, this variety answers well, and is used here on the large scale for that purpose. Aloin to a great extent has supplanted the use of the drug itself in veterinary practice, and increases yearly in favour. One large factory here quoted \$300 (12*s.* 9*d.*) lately.

BALSAM TOLU.—Twenty-four cases arrived last week, and a further decline has to be noted, prime quality in 40 lb. cans sold from importers' hands at 27*c.* (1*s.* 2¹/₂*d.*). It would seem that present rates prove remunerative by the quantities arriving regularly each steamer. Should this prove to be the case, it is a poor look-out for the holders of old stocks. It is difficult to obtain reliable information from the source of supply. Shippers say it does not pay under 40*c.* (1*s.* 9¹/₄*d.*), but still large quantities come forward.

BALSAM COPAIBA is tending higher; arrivals have fallen off, owing, it is said, to the extremely low rates prevailing. The demand is good and stocks are small; it will be a matter of surprise if the market does not continue to improve. Prime Maranham is quoted 34*c.* (1*s.* 6¹/₂*d.*); Maracaibo, if bright, same price.

COCA LEAVES.—Contrary to expectation, considerable arrivals took place last week, and the market is decidedly weaker, prime dark green Huanuco leaves being offered at 35*c.* (1*s.* 6¹/₂*d.*), while the light green Truxillo kind, being in large supply (20,000 lbs.), are pressed for sale down to 25*c.* (1*s.* 1¹/₂*d.*) without finding buyers. The large cocaine manufacturers have been holding off purchasing, and state they are not prepared to buy at present rates.

GUARANA.—Further heavy arrivals have depressed the market, and to-day 1*s.* 25*c.* (5*s.* 6*d.*), or perhaps less, would buy. The home market being now supplied, it is probable exportation on consignment will take place.

HONDURAS SARSAPARILLA.—The common brands have again advanced owing to brisk demand for the home trade, and now nothing is to be had from first hands under 31*c.* (1*s.* 7*d.*).

OIL PEPPERMINT.—From reliable sources the following position of the stocks in America has been compiled.

Bulk Oil in Tins.

			lb.
In dealers' hands in Michigan	..	..	4,500
" growers' "	"	"	2,500
" dealers' "	Wayne Co.	..	4,000
" growers' "	"	..	3,000
" New York	..	..	5,500
			19,500

This includes any of the H. G. Hotchkiss brand in the country. The stock of this brand in New York is difficult to arrive at, being mostly held by speculators, but it is not thought to be over 200 cases. The brand L. B. Hotchkiss is extinct, as none of it has been bottled for some years, and stock at most 25 cases only left. It will thus be seen the total available supply for the next six months is, say, 25,000 lbs. of oil, part of which is sure to be carried over, and this quantity is to supply both home and export demand. Already 40,000 lbs. have been shipped abroad, mostly as H. G. H. brands; and as the annual exportation runs from 50,000 to 80,000 lbs., it will be seen that at the usual rate of consumption the supply would soon run short. Again, it is stated that a great deal of the oil left is deprived of its menthol, and consequently not marketable abroad except in Germany. Of course high prices tend to curtail the consumption; but it would be well if users would examine their stock, and buy, at any rate, what will carry them on till the new crop in October, for, from the above statement, lower rates cannot be expected, and, indeed, the growers both in Wayne and Michigan at the present moment are holding what they have left for \$4, or equal to 16*s.* 9*d.* net in London. If calculated as Hotchkiss brand this would be equal to 20*s.* 9*d.* London terms, without allowing anything but for cost of bottling, and no profit or commission to dealers.



Memoranda for Correspondents.

Always send your proper name and address: we do not publish them unless you wish.

Write on one side of the paper only; write early; and devote a separate sheet of paper to each query if you ask more than one, or if you are writing about other matters at the same time.

If you send us newspapers please mark what you wish us to read.

Ask us anything of pharmaceutical interest: we shall do our best to reply.

Shop Hours Regulation Bill.

To the Chemist and Druggist—

SIR,—This appears to me to be another specimen of the meddling and muddling tendencies of the Governments (Tory and Liberal) of the present day, and the amendment, in my opinion, makes matters worse. There is a great capital made nowadays out of free trade. I would like to know is this free trade? What right has any Government to say to any tradesman how long he himself may work at his own business? I may point out what, in my opinion, is a fatal blot in the amendment, and that is, "Any town may adopt on a decision of two-thirds of the shopkeepers." Now, my business is in a small township outside, but, practically speaking, one with a large city. Suppose the small township adopts the Act (they generally go in for new fads), the city does not. I should be compelled to close at 8 o'clock; others in the same business, a few dozen yards further on (but in the city), may keep open till any hour. I need hardly point out to any of your readers who have suburban businesses what the result would be.

I am, yours faithfully,

A REAL FREE TRADER.

SIR,—I hope now an attempt is being made to shorten the hours of toil in retail shops that chemists and druggists will give a hearty support to the movement, and welcome the fact that Parliament is about to be asked to give them that daily relaxation from business which they, by their stupidity and petty jealousy of one another, have failed hitherto to take for themselves.

One thing is certain, that early closing will never take place until made compulsory. A few of us tried it in this neighbourhood some time since with the usual result—failure, after a week or two. The argument against closing at 8 p.m. is, that people taken ill after eight must have medicine; but surely the same argument holds good against closing at any other hour, or, in fact, against ever closing at all. Moreover, there are hundreds of chemists who now close at eight and even earlier, who find no inconvenience result from so doing. I can quite imagine those who are in the happy position of being able to keep an assistant not caring a rap for early closing, as they can take their rest and relaxation when they like; but let me on behalf of the great majority of chemists, whose lives are lives of genteel slavery, and to whom to close at eight would be an inestimable boon, express a hearty wish that the "Early Closing Bill," should it pass into law, may be made to include the overwrought and too closely confined

CHEMIST AND DRUGGIST. (132/17.)

Moss Side, Manchester, March 30.

SIR,—Before the "Early Closing" movement was started in this district our time for putting up shutters was ten o'clock, and though surrounded in every direction by competition in the same line of business, the chemists in this road alone, out of all the neighbourhood, closed at eight o'clock absolutely, except for urgent medicines, thus converting what was practically imprisonment into an approach towards freedom. After a time every other business but the chemists

lapsed back again into late hours, and this road now presents the rather peculiar spectacle of having the chemists' shops closed and the other shops open.

As to the result, we do not know that we have lost a single regular customer through it; probably a few stray procrastinators have gone without their "pen'orth of bilious pills" or seidlitz powder, but it certainly has not been in any way detrimental to business, while at the same time it has been a great relief. I believe the vast majority of my fellow-chemists would welcome a law which would close shops at a reasonable hour, though a few from long habit would object.

Would it work hardly on some who are scraping to keep the wolf from the door? I do not believe it would; the man who is going to ruin would not be kept solvent by longer competition. Long hours tend to bring men to insolvency by ruining their health, and thus incapacitating them from doing their proper share of work. This keeping the nose at the grindstone for so many hours at a stretch clouds the mind and narrows the ideas down to the vanishing-point, or till the view is no larger than that contained within the four walls of the shop.

Too close confinement has the same effect as too much drink: it is a habit that grows on a man till he remembers little, and cares less about the outside world, fresh air, and the open country; and so, when a bank holiday or a Sunday comes along, he takes down his shutters and counts his pence, till all days are alike monotonous. The latter part of the day—the time of gas-light fumes—is far more injurious than all the rest of the day.

If it be deemed inadvisable in the interests of the freedom of a man's action towards himself, to prevent him keeping open his shop till any hour he pleases, it should at least be made illegal for him to keep his apprentice or errand-boy from a reasonable opportunity for recreation or improvement; and I would like to see the term "young person" apply up to twenty years of age, instead of eighteen, as at present defined in the Bill. The latter thus placed would in time have the same effect as compulsory closing at a certain hour, and would be perhaps the safer plan for arriving at the same result.

Yours truly,

Hornsey Road, N.

JOSEPH WILSON. (132/20.)

SIR,—I was glad to see your reference to early closing in the last issue of THE CHEMIST AND DRUGGIST, and trust there will be a full expression of opinion by the trade generally. I had thought it would be a good thing for the Chemists and Druggists' Trade Association to take the matter up, as I believe it is quite as important for chemists to try and curtail their hours of labour as it is for any other traders.

I am opposed to legislation that will prevent an apprentice of sixteen from working as long as one eighteen years of age. It would certainly tend to make masters unwilling to have any one under eighteen, as it would render them liable to the visits of officious inspectors; as well as make it very inconvenient to be short handed during the last hour or two of the day's business, just when there is in many shops the most need for all hands.

I am strongly in favour of early closing being made compulsory by law. Voluntary early closing has been tried, and failed to a large extent, through the greedy jealousy of one or two in a district. Let a reasonable uniform time be fixed by law; the *Times* suggested Monday up to, and inclusive of Friday, 8 o'clock, and 10 o'clock on Saturday, is quite sufficient for all businesses, not excepting chemists. The only exemptions I would make would be properly licensed refreshment houses or shops, where refreshments may be taken upon the premises. Of course chemists would still be liable to have customers after business hours, urgent cases requiring attention at any hour. But if the hours of general business are limited, and shops are closed, no doors left open to invite customers after closing time, it would be a great advantage to both masters and assistants.

With regard to Sunday, I cannot see my way to chemists being closed altogether, but would suggest that the time on that day be limited to an hour at noon and an hour in the evening. As only urgent cases should be attended to on Sundays, I think this would be sufficient. There are chemists who, instead of limiting Sunday trading, would

make it a day to *push* business with the energy that makes it clear that, but for appearance sake, shutters would be down, doors wide open, flaming placards displayed in the most prominent places, along with the sound of pestle and mortar ringing in the ears, indicative of a thriving trade combined with a very low estimate of the proper observance of the Sabbath.

Before closing my letter allow me to express my thanks for the change you have made in the issue of THE CHEMIST AND DRUGGIST. It is a great improvement, as it enables you to bring promptly before your readers practical questions that would lose valuable time when left over for the monthly issue.

Yours truly,

JOSEPH W. GILL. (133/42.)

SIR,—The principle underlying the Shop Hours Regulation Bill is one that ought not to be restricted to any trade or profession: it appeals to our humanity, and should receive the support of every chemist. The well-being of "young persons" demands that they should not be confined to any business more than 12 hours per day, and it is a reflection on our nineteenth-century civilisation that it should be felt necessary to enforce such a measure by Act of Parliament. To make early closing compulsory would be a blow at individual liberty, and on this account I should not support it, although for three years I have been trying to get early closing in my own neighbourhood, and believe that we should be benefited, and the public not inconvenienced by it, but feel that it is a question the State should not interfere with, but leave it to local influence and individual circumstances to determine. Restricting the hours of labour of employes would be a step in the right direction, and would have a salutary effect on early closing, but beyond this, moral, not legal, force is the true remedy to rely on. The State should relieve oppression, but should not check liberty,

Yours, &c.,

Nottingham, March 31.

WILLIAM GILL.

Patent-medicine Stamps.

To the Chemist and Druggist—

SIR,—Probably your correspondent, Mr. E. J. Cox, would at once get an official reason why the two labels quoted are pronounced liable. The decision that the first label is non-liable is doubtless good, for the component ingredients of the quinine and iron tonic are clearly named. The two remaining labels, however, refer to something *differing from some other thing* (fresh decoction of dandelion and black draught) *that is named*. It appears, by implication, that in these cases a "nostrum" is what is pointed at by the wording on the label, and the Revenue authorities have pronounced accordingly.

Yours faithfully,

F. NEWBERRY & SONS.

SIR,—There seems to be a large amount of ignorance displayed by chemists nowadays as to whether this or that label is liable to stamp duty. The Act seems to me so plain that any child might understand it. Perhaps the information as under will make the matter clear to any who are in doubt.

1. If the word "FOR" appears on any printed matter in connection with any name or names of disease, "*It is liable*," because it is for *particular diseases* which are specified.

2. If the word "CURE" or "REMEDY" appears on any printed matter as above, "*It is liable*," because it is a "CURE" or "REMEDY" for *particular diseases* which are specified.

3. If a chemist's name appears at the top of any printed matter—as SMITH'S so-and-so—IT IS LIABLE, because it is Smith's, *i.e.* a proprietary medicine of Mr. Smith's.

4. If at the bottom of printed matter the words "PREPARED BY SMITH, chemist, London," IT IS LIABLE, because it is a *proprietary* article—from Mr. Smith's recipe.

Yours respectfully,

W. C. H.

SIR,—Since you have invited an expression of opinion on this subject it is to be hoped every chemist who has a suggestion to make will make it in the interest of the trade, that

from the mass of advice useful hints may be gleaned on which to found action.

I have no hesitation in supporting the view held by Messrs. Higgs, Phillips, and others—on no account agitate for the halfpenny stamp.

Now that doctors for the most part dispense their own medicines, and grocers, hairdressers, linendrapers, &c., sell foods, patents, and proprietary articles of all kinds at, and in some cases under, cost price, many chemists find the most remunerative part of their business to consist of the sale of 6d. and 9d. put-up articles, such as children's cough syrup, &c. This trade at present is entirely in their own hands, and if a little care be taken in drawing up the labels cannot be interfered with by the excise. The reduction of the duty to $\frac{1}{2}$ d. on a sixpenny article would be the signal for a multitude of miscellaneous dealers to cut in, not, mind you, in the way of fair competition, but merely with the intention of selling articles in no way connected with their own trade at absurdly low prices, for the purpose of advertising their business. If any modification of the Act is advisable, I would suggest increasing the amount covered by the $\frac{1}{2}$ d. tax from 1s. to 1s. 6d., including duty. This would not be open to the same objections as the $\frac{1}{2}$ d. stamp. It would benefit both the excise and the chemists, as the latter can at that price (1s. 6d.) place before the public thoroughly sound preparations in an attractive form that would put most 1s. $\frac{1}{2}$ d. articles in the background, and I think would not mind paying $\frac{1}{2}$ d. for the privilege of recommending them by bills and on their labels, whereas they object to pay 3d., which is too large a proportion, and cast about for a form of words that will not be liable to duty, sometimes with unsatisfactory results.

Yours faithfully,

Beckenham, March 25.

CHEMICUS.

SIR,—In my opinion no amount of agitation will have any effect on the existing state of the patent-medicine trade. Large profits on these articles is a thing of the past. A higher licence is impracticable and utterly useless. It might affect a few small traders, but the majority of the cutters would willingly pay five guineas a year for the privilege of selling patent medicines and proprietary articles 25 per cent. below the advertised price. It is a first-rate advertisement, intended to lead the public to imagine that all their goods are to be had on the same advantageous terms.

It appears to me that our business perplexities arise from want of more freedom of action; no class of traders is hampered with such restrictions as are placed upon us in the recommendation of our goods to the public. Now that the agitation has commenced let us endeavour to propound a plan whereby we may be enabled to recommend our goods without having to pay too dearly for that privilege, or rendering ourselves liable to vexatious prosecutions by the authorities at Somerset House. With regard to the suggested halfpenny stamp, it seems to have received a "knock-down blow," through the not illogical idea that its use would tend to flood the market (represented by oilmen and others) with 2½d. preparations. I must own that I fell in with that view, but have since thought the matter over and fancy that I can see a way to counteract that evil. My suggestion is this:

That halfpenny and penny stamps be issued; these stamps to be known as the "Chemists and Druggists' retail proprietary stamps," to be used exclusively by registered chemists and druggists keeping open shop, subject to the following or some such regulations. That all preparations recommended for the cure or relief of any complaint shall bear one or other of the said stamps; viz., halfpenny on all articles of the value of 9d. or under; one penny for those value 1s. and exceeding 9d. All articles thus stamped shall bear the name and address of the vendor and be sold at his establishment only. The vendor to have the right of recommendation by issuing printed circulars over the counter or by show cards or tablets in the window. Any person advertising such stamped articles beyond the precincts of his establishment or supplying the same to agents for sale shall be liable to a penalty. Any chemist having used these stamps for certain articles and wishing to extend the sale of such articles by placing them on the market shall be allowed so to do, but the articles thus sold shall at once be liable to the full patent-medicine duty now in force.

I think such a plan would place us all on an equal footing. That such a concession on the part of the authorities would

be a great gain to the revenue I have no doubt, as the stamps would be very largely used, for who among us would live in doubt as to the liability of even a threepenny box of pills when a halfpenny stamp would render all secure?

Yours truly,
W. R. (133/52.)

SIR,—I am glad to find by most of your correspondents on the above they are not in favour of lowering the patent-medicine duties, or of raising the price of licence. Messrs. Phillips and Wheeler, of March 20, have struck the right nail on the head, especially after the inquiry of W. C. H. in the same issue, asking if he could supply 1*l.* bottles of poison to grocers, &c., with his address on them; most disgraceful, I consider it, on his part. My advice is keep the licence at 5*s.*, place a 1½*d.* stamp on all 6*d.* articles, 3*d.* on the shilling, and every additional one, save and excepting where the article is retailed over the counter of the proprietor, where no duty should be paid. I think the stores, grocers, and hucksters have ruined the trade enough already, without further playing into their hands.

I am, sir, yours faithfully,
A COUNTRY CHEMIST.

SIR,—Having reference to the medicine stamp and licence question, there is one point I have not seen touched; I refer to the case of one licence covering a number of shops. I know of a firm having upwards of thirty, or about 2*d.* each; this is not only a great loss to the revenue, but scandalous to the ordinary chemist. Why should a cutting grocer be able to retail medicines at a cost of 2*d.* for licence, whilst the chemist has to pay 5*s.*? The attention of the revenue authorities ought to be called to so great an injustice. I am decidedly against the introduction of small value stamps. Prior to the raid of informers, the oil shops were flooded with 1*l.* and 2*d.* corn solvents, &c.; now they have all disappeared. The ½*d.* stamp would simply be a signal for re-introduction, and no doubt they would be well supplied with printed matter to delude the public. I am, sir, yours, &c.

W. FRED. BARTLE. (133/33.)

Greenwich, March 31.

SIR,—The correspondence on the question of reducing the price of patent-medicine stamps has been, I think, pretty exhaustive; anyhow, it has shown some excellent reasons both for and against the proposal. One thing is tolerably certain—any change made by Government will not be made in the interests of a comparatively few distributors, but rather to benefit the much larger number of consumers, and principally to increase the revenue. If the trade had a real grievance, its only *hope* of redress would be in a unanimous appeal to the "powers that be." Judging from your correspondents, any agreement in action is out of the question. It seems to me that there is little hardship on the druggist in charging the public with a three-halfpenny stamp. The public pay the money, let them grumble if they like; I myself never hear them. The large patent-medicine proprietors, also, who have much capital lying dead in patent-medicine stamps, I notice have not joined in any agitation for abolition or reduction of price. Why then should we? I doubt whether we should care twopence if we could get 1*s.* 1½*d.* for an article instead of 9*d.* or 9½*d.*, and if the stamp duty was reduced our profit would not increase. Men who are willing to sell for 5 or 10 per cent. profit will not be influenced by any patent-medicine stamp act. In my opinion "Better to bear the ills we have, than fly to others that we know not of."

One suggestion I have not seen made by any of your correspondents would, in my humble opinion, do the trade more good than any Acts of Parliament. It is that patent-medicine proprietors should lower the advertised retail prices of their articles, say 1*s.* 1½*d.* to 1*s.*; at the same time raising the wholesale price to 11*s.* a dozen net, or in gross lots to not less than 10*s.* 9*d.* It would give the large proprietors (and small ones too) a splendid line for advertising, would increase their profit from 15 to 20 per cent., and would do us poor chemists and druggists in towns where cutting is rampant a very good turn; for what grocer or stores would think it worth while to cut 1*s.* pills for 11*d.*? It sounds nothing to the ear of a public accustomed

to 1*s.* 1½*d.* Allcock's for 7*d.*, and 1*s.* 1½*d.* Cockle's at 9*d.* The scalpers would turn their attention to other quarters, and we might get 10 or even 15 per cent. instead of sometimes nothing. I don't suppose those druggists living in towns where they still get full prices will sympathise with my sentiments, but their number is lessening every year, and, after all, it might save them the pain of seeing cutting stores opened next door to them; neither do I expect those who think 33½ per cent. per month the proper rate of payment for reaching down a box of pills from a case and handing the same to a purchaser will altogether agree with me; but to the majority of the trade, who, like myself, are compelled by the force of circumstances to sell proprietary articles for 5 or 7½ per cent., I submit it would be the very best thing for us, in that cutting men would leave us alone. We should be able to sell many more, if not all the patents that are sold, and thus be brought into closer contact with a larger number of the medicine-buying public, for we must not lose sight of the fact that, where the patents are bought, there also drugs in larger or smaller quantities are bought also.

Even if these happy events did not come to pass, it would leave us in no worse position with the public, for nothing can be much more demoralising than the everlasting dangling of a mercenary bait before a bargain-hunting set of people. I should like the matter ventilated in your columns, if you, Mr. Editor, think the idea of sufficient value. Like many of your correspondents I think the weekly issue of your journal a splendid idea (for us subscribers). Since I have taken it in, the amount paid for it has been recouped several times by my taking advantage of your valuable hints and recipes.

March 30.

E. J. B. (12/133.)

Cod-liver Oil Emulsion.

To the Chemist and Druggist—

SIR,—IN THE CHEMIST AND DRUGGIST DIARY, 1885, you give directions for various emulsions, and speaking of emulsifying cod-liver oil by gum tragacanth, you say, "Take powdered tragacanth 2 parts, glycerine 16, and when thoroughly incorporated add aq. bulliens q.s. to complete gelatinisation. Take this as a basis, and with a mixture of ol. jecor. 2 and aq. calcis 1, well mixed, add gradually in a proper mortar with constant stirring," &c. As I cannot make a workable formula out of these directions, might I ask you to put it into quantities for me. I can only make 2 parts oil in 17 other fluid, *not reckoning* the aq. bulliens required to complete gelatinisation in first part of direction, whereas most emulsions have 50 per cent. of oil.

PERPLEXITY.

[For 1 part of tragacanth from 20 to 30 parts of boiling water are required to make the jelly, and this is sufficient to emulsify double that amount of the cod-liver oil mixture, and even more may be incorporated by a careful hand. The following as actual quantities may be taken for guidance:—

Powdered tragacanth	3 <i>ss.</i>
Glycerine	3 <i>iv.</i>
Boiling water	3 <i>xij.</i>
Cod-liver oil	3 <i>xxiv.</i>
Lime water	3 <i>xij.</i>

Some prefer to mix a third of the oil with a third of the lime-water, and to incorporate this first, then the rest of the oil is carefully worked in.]

Pepsin in Prescriptions.

To the Chemist and Druggist—

SIR,—In reply to "J. P., Liverpool," I have no doubt whatever that Bullock's pepsine was supplied, as I happen to know the regular custom of the firm in question. My own opinion is that in cases of this kind "B.P." pepsine ought to be dispensed; but a more expensive brand having been given by the first chemist, what should the second do? What I did was to dispense Bullock's and charge 5*s.* 8*d.* in order to show that I knew what I was doing, and when the prescription came back, I explained that I could supply quite as good value for 2*s.* 8*d.*, showing wherein the difference lay. The customer, however, insisted on having it "dispensed as it was written," nothing I could say being of

any avail to make her believe that "it was written" for 2s. 8d. as much as 5s. 8d., and consequently the bottle has been repeatedly filled at the latter figure.

A COUNTRY CHEMIST.

Druggists and the Public.

To the Chemist and Druggist—

SIR,—At one time druggists were able to consider medical men and the public their friends, but now I much regret to say we must look upon both as our enemies, and therefore must treat them as such. They only make a convenience of us; for their convenience and protection a vexing examination is imposed upon us, but we get no protection in return. Medical men supply their own medicine and appliances, and only send patients to us for expensive and unusual articles, or at odd times when it is not convenient to supply it themselves. The public also supply themselves from other sources, and apply to us after hours, or for things they cannot get elsewhere, and demand these articles at wholesale, if not cost, price. I find customers after eight and on Sundays more frequent, also the demand for odd things, which do not pay to keep. At one time I was inclined to give way, hoping to regain my old customers, but have since found they only make a convenience of us, therefore should like the opinion of others as to charging extra after eight o'clock. We cannot close like a grocer, therefore get used and humbugged; but I strongly suspect a charge of say sixpence a head after hours would do good. As to the medicine tax, I fail to see what we have to do with it. It is true the Government impose upon us the labour of collecting the tax, but so long as the public do not object to pay it, why should we trouble?

Yours, &c.,

KESTREL. (27/123)

Assistants and Examinations.

To the Chemist and Druggist—

SIR,—I hope the sad and serious effects of our examinations as depicted by our friend from Westmoreland are more imaginary than real, or the present generation of young men must have very much deteriorated. Surely the brain power must be very weak, and moral courage more so, if young men cannot combat with reverses. Would "Chemicus" have such fragile bodies hold responsible positions and shine as luminaries of the profession? Are our examinations more difficult than those of other professions, and what percentage has the death-rate amongst chemists' assistants increased since the passing of the Act?

As for the granting of certificates on the expiration of apprenticeship, would it not be contrary to human nature for a master to acknowledge the incompetency of his pupil after three, four, or five years' tuition? Now we have a recognised standard favouring no one. Were the power of qualification in the hands of the master, what a mixed and peculiar class of qualified chemists we should have! The chemist, druggist, and oil and colour man, all on the same footing, each with his certificate, posing before the public as "fully qualified." I might ask, Are all employers of apprentices qualified to give the suggested certificates? I think not. If apprentices and assistants would devote a little time daily to study, and let it extend over a period of time, instead of trying to cram and pass the examinations without trouble, we should hear of less failures. "If a thing is worth doing, it is worth doing well," and were these words taken to heart we should hear fewer complaints and have a larger accession to the ranks of the

Midlands, March 29.

QUALIFIED. (49/131.)

SIR,—The letter of "Chemicus" in your last issue has quite startled me. "Chemicus" says it often happens that when a young man fails to pass the Minor he is ruined through taking his failure to heart, and throws away an otherwise valuable life. On the other hand he says, that others, who pass, die through overstudy, and gives a touching case of one young man who died. As I am about to present myself for the Minor I would like your advice, as, if I fail I am in danger of going wrong through taking my failure to heart, or, should I pass, a premature death perhaps awaits me,

through weakness brought on by overstudy. What a glorious age this is when the crown of martyrdom can be won so easily! I would also like to know if young men who "have not the strength of brain to know if young men through an exam. such as the Pharmaceutical Society require" are fit persons to be chemists at all, where at times a considerable amount of "strength of brain" is required. In conclusion allow me to remark that to my mind the encouraging letter of "Qualified but Underpaid" forms a brilliant contrast to the dismal wail of "Chemicus."

I am, Sir, yours truly,

S. W. W. (45/131.)

SIR,—The correspondent who signs himself "Qualified but Underpaid" has been very fortunate in passing the Minor examination with so little expense and trouble. But I am afraid he is a great exception to the rule, as I know a great number of students who have not passed the first, second, or third time, and have had to spend at least 100% on tuition, board, lodging, and books, &c., whilst studying up at London: so if a fellow can get through as easy as your correspondent says, I do not see the force of going to a School of Pharmacy at all. If you were to take one hundred students and put them through the same, before going up, I am afraid you would find 80 per cent. at least failed in the first attempt. If he has been studying all the years of his apprenticeship under good masters, why of course he ought to pass. But every one cannot have those privileges. By the tone of his writing I take it that he has got through very easy indeed, and it must be simply child's play. And I should like to hear how it can be done at so little expense and trouble after seeing so many good fellows fail.

I remain, yours sincerely,

ONE WHO INTENDS HAVING A TRY SOON. (132/22.)

SIR,—I am studying at a school of pharmacy, and I with several of my fellow-students read with great amusement the letter signed "Qualified, but Underpaid" in your last week's issue. Of course there is every credit due to him for having passed through the ordeal, which opens unto us the gates of our enviable business with all its trying competitions; but we agree that the best place for "Q. but U." would be in a conspicuous position in the museum at 17 Bloomsbury Square, under the cover of a glass case, and kept there as a model for future would-be pharmacists: his presence would draw crowds of students. He must indeed be clever, for out of the whole of the candidates who present themselves for the Minor, nearly all of whom do so with the aid of lectures, the encouraging number of one in forty gets through at the first attempt. We sometimes meet with men who "have a shot" at the Minor without any instruction beyond what they gain from books alone, but never until I read your correspondent's letter have I met with one who succeeded, either at the first or any subsequent attempt until he had succumbed to the inevitable, and had his eyes open to the "why and wherefore" of everything connected with the six subjects required of us. We should like to know his "modus operandi." He is to be complimented on his success.

I am, dear sir, yours faithfully,

UNQUALIFIED (but hope to be soon).

J. R. H. sends us the following items in reply to several correspondents in last week's issue:—

125/64. **Oil of Spike.**—In the north of Ireland and some other parts of the country a liquid called "oil of spike" is largely sold as an external application for rheumatism. It is simply oil of turpentine coloured with alkanet root.

126/18. **Fixed Stoppers.**—A very good method is to heat the neck of the bottle with care, in a spirit or gas flame, equally all round, applying a constant drawing force to the stopper with one hand, the bottle being held in the other. By this method success will generally be attained.

127/25. **Tobacco Sheep Dip.**—A dip of this character is used by stockbreeders in the lower districts of East Lothian. It varies very much in composition, each shepherd apparently having a recipe of his own. It is generally made by preparing a strong infusion of tobacco paper (the paper in

which tobacco has been pressed and thus saturated with liquor). To each gallon of infusion about 8 oz. of soft soap and 4 oz. of spirit of tar are added. The dip is applied by pouring on the fleece and not by immersing the sheep in the bath; about 1½ imperial pint for each sheep is sufficient.

For blackfaced sheep in the highlands of Perthshire the following is used:—

	lbs.
Tobacco juice	8
Hellebore	6
Soft soap	4
Arsenic	½
Water, about 15 gallons.	

This quantity is sufficient for 100 sheep, the dip being applied in the same manner as the first.

In Sutherlandshire it is customary to treat lambs with a mixture of oil and tobacco juice before sending them to "wintering." I do not know the proportions, but the cost is about 3d. per head.

31/132. **Fixed Stoppers.**—*G. B., of S.*, writes:—A few drops of paraffin oil often succeed when other solvents fail. For shop stoppers a useful implement is a large and strong boxwood stopper loosener. I have one 3 × 1½ × 1½, very convenient to handle and successful in removing stoppers.

129/72. **Linimentum Ammoniae.**—*Mr. John Lees (Glasgow)* writes:—I have found the following to answer admirably:—

Liq. ammoniae	3j.
Ol. olive	3iss.
Ol. sesame	3iss.

Spirit unnecessary.

132/3. *S. J. Sheriff.*—Glacialine is understood to be composed of boric acid and borax, the latter in small proportion, say 1 in 10.

131/10. **Bacchus.**—"Head" on Beer.—Sulphate of iron in the proportion of a quarter of an ounce to the barrel of beer is said to produce an excellent froth, which adheres to the pot when the beer is poured out. But the use of the salt is illegal, and a severe penalty follows its discovery.

132/29. *H. S. F. B.*—See "Hints to Minor Students" on another page. There is really no short cut to equation-writing: the secret about it is to understand what takes place in a reaction. Shenstone's "Introduction to Chemistry" (Rivingtons, London, price 2s.) will assist you.

More Luck.

To the Chemist and Druggist—

I tender my congratulations to "Lucky Reader" on his good fortune in finding a sovereign in his quassia drawer, and as he seems anxious to know if any other reader has been equally fortunate, I wish to inform him that he is not the only lucky man in the world. A few weeks ago I found a sovereign amongst the silver in the cash drawer, which neither I nor my employer could account for, and up to this date its sudden appearance remains a mystery. But my good fortune does not end here. A few days afterwards, having occasion to turn out the contents of a drawer, to my surprise I found in the bottom of it a half-crown, which bore evidence of having lain undisturbed for a considerable time. The only unfortunate part in my experience was that both the sovereign and half-crown were the property of my employer, and on delivering them up to him he expressed his satisfaction by asking me to see if I could find another. I can imagine some of your readers, in these hard times, carefully scrutinising the contents of their quassia drawers, but I am too tender-hearted to depict the look of disappointment which pervades their countenances after a half-hour's fruitless search. In conclusion I would suggest that those who are not too hard pressed with work should kill time by peregrinating the "nooks and corners" of their establishments;

and who knows but there may be found something that will repay their trouble?

Manchester.

J. C. K.

132/14. *Ignoramus.*—See January number, page 64.

131/52. **Ergot and Iron Pills.**—*C. E. L.* writes:—"The following pills become dark coloured after being kept some time:—Pulv. ergotae gr. ij, ferri carb. sacch. gr. ij, mucil. tragacanth q.s.; fiat pil." and wishes to know how to prevent darkening. Oxidation of the iron salt and action of this upon one or more of the constituents of the ergot (such as scleroxanthine and sclerocrystallin) are the cause. You cannot prevent this by any practical way; moreover, darkening is of no consequence from a therapeutical point of view.

H. D.—**Lime-juice and Glycerine.**—See issue of March 13, page 136.

Shaving-cream.—A preparation which has simply to be smeared on the skin is prepared as follows:—

	oz.
Curd soap	8
Almond oil	2
Glycerine	1
Spermaceti	½
Carbonate of potash	½
Water	16

Cut the curd soap into shreds and dissolve it by the aid of a water-bath in 14 oz. of water. Dissolve the spermaceti in the almond oil, and while warm mix with it the glycerine, potash, and remainder of the water; transfer to a warm mortar, gradually and steadily incorporate the warm soap solution, and continue to stir until a smooth paste is formed. With this incorporate a suitable perfume.

132/4 *Photo* asks what is the composition of Schlippe's salt, used for photographic purposes?

[It is a double sulphide of antimony and soda, and, as with other antimony sulphides, its composition is uncertain; but it is probably Na₂SbS₃, 9H₂O. It is prepared by boiling together mixtures of 75 parts sodium carbonate in 250 of water, and of 26 parts of lime in 85 of water. Now add 36 parts of powdered black antimony and 7 of sulphur, and boil until the grey colour disappears, then filter. The filtrate yields crystals of Schlippe's salt on evaporation.]

Cyclostyle Ink.—*Ecosse* would like to have a recipe for an ink suitable for use with the cyclostyle printing machine.

128/34. *J. T.*—**Acetone, or Pyroacetic Spirit.**—Made from acetate of lime by heating in a retort. It is purified by fractional distillation over quicklime. Other acetates may be used, and pure acetone is generally made from barium acetate. It is used as a solvent for resins, and in Rubber Goods Factories.

128/43. *A. R. Rodgers.*—**Bitter Tincture.**—

	oz.
Gentian root	2½
Cascarilla	1
Cardamoms	½
Orange peel	½
Cochineal	¼
Raisins	2
Aromatic spirit of ammonia	2
Rectified spirit	7
Water	11

Macerate for a week and filter.

127/63. *Apprentice.*—See article on another page.

R. Watts wishes a formula for *Euchrisma*.

126/51. *Arthur*.—Glycerine and Cucumber, an emulsion with soap and *Unguentum cucumeris*. If worth while imitating it is worth experimenting upon. The formula has not been published.

125/62. *Emigration*.—Brewing and Distilling.—A manual on the subject is published by Churchill, price 6s. 6d. Soap Making by Alexander Watts is the latest published work.

Ecosse writes regarding an Explosion in making a mixture containing sodium and calcium hypophosphites and glycerine. He says:—Having rubbed them up in a glass mortar, I transferred the mixture to an evaporating dish to bring about solution more completely. That being effected, as far as possible, I returned the hot mixture in small quantities at a time to the glass mortar, my apprentice rotating the glass pestle slowly the while. When about 3 oz. had been thus retransferred a loud report was heard, and both apprentice and myself found ourselves subjected to something like a pelting shower of hot particles all over our faces and hands, which proved to be pieces of the pestle covered with hot glycerine. We found on examination that the pestle had split up to the nob at the top into hundreds of fragments, none of them fortunately very sharp.

These fragments were scattered not only over our faces and clothes, but also over the counter and over the shop to a distance of 7 or 8 feet.

The cause of this strange freak on the part of "Mr. Pestle" is a mystery.

Two theories present themselves—

1st. An explosive compound may have been formed either of the hypophosphites themselves, or in combination with the glycerine, a phospho-glycerine, if I might so term it.

2nd. The explosion may have been due to the unequal expansion of the molecules of the glass of the pestle.

Against theory No. 1 may be urged that if such an explosion had occurred, the mortar also would have been broken, which did not take place, and everything considered I am inclined to think that theory No. 2 is the right one.

The lesson to me was self-evident, "Don't use again a glass pestle in rubbing up hot glycerine."

[*Ecosse* sends us the remains of the pestle. An examination of the fragments leads us to conclude that theory No. 2 is the proper explanation: the fragments show a fairly constant double layer of particles, which clearly indicate unequal expansion due to the heat of the mixture. The first theory is out of the question.]

66/121. *Pil. et Haust.* asks: "Can you recommend a telephone, reasonable in price and capable of being fixed by an amateur? We want to form a communication between the shop and warehouse, but the distance is too great for a speaking-tube, and the Post Office rates are prohibitory. A mechanical telephone was advertised lately by a company, but the reports of disinterested friends, who examined it for us, were not such as to induce us to adopt it." We have been told that the mechanical telephone does answer fairly well, but that it is dear. Perhaps some one will give his experience.

A. F. Bottomley (Holbeck, Leeds) asks for instructions for charging a Gaiffe battery. The inquiry is hardly definite enough. Gaiffe's batteries are of various kinds. There is a chloride of silver Gaiffe's battery, a bichromate, and, we believe, some others.

128/49. *Assistant*.—Chloroform (British) made from methylated spirit can be used in all cases where chloroform is required, for it is pure chloroform.

Tinctura Cinchonæ (B. P. 1885) is of a reddish-brown or ruby colour, varying in intensity as the bark varies in content of cinchona red; it should not be yellow.

125/13. "*Seed*" wishes to know where he can buy flower and garden seeds in 1d. packets.

Quinine Sulphate.

As the quantity of quinine sulphate is at present attracting considerable attention, it may be interesting to note the weight of three 25 oz. tins, which had been kept on an upper shelf of a retail shop for about two years, and which there is every reason to believe, were full weight when bought. The short weight no doubt represents water. No. 1 bore the label of a well-known foreign maker, and Nos. 2 and 3 that of a London firm, who are not makers, and quite likely this quinine also was foreign.

No. 1 contained	22 oz. 410 grains
" 2 "	24 " 109 "
" 3 "	24 " 218 "

133/39. *Student* wishes to know what the first ingredient is in the following:—

Pin. Canad.	3i.
Glycerine	3ij.
Aq. ad	3vj.
Ft. lotio.	

To be used as directed.

The powdered bark of *Pinus Canadensis*; it is used in Coffin's cures, and may be got from any wholesale house.

131/13. *Subscribers* wish to know where they can purchase a gelatine capsule mould.

133/37. *Smilex*.—Stone Bottles for Furniture Polish.—Janeway & Co., Albert Embankment, London, S E., will supply.

30/132. *A. J. T.*—We think Messrs. M. Davis & Co., London Docks, E., are agents for some foreign petroleum burners of large size. Their advertisement appears in this journal. Messrs. Defries, Houndsditch, and Quittman & Co., of Jewin Crescent, also supply such goods.

131/51. *T. E. P.* asks if this is a good form for Digestive Pills.

Extracti aloes barbadensis	gr. iss.
Solæ carbonatis exsiccant.	gr. j.
Pulveris rhei	gr. j.
" ipecacuanhæ	gr. 1
Extracti nucis vomicæ	gr. 1

Misce et fiat pilula.

It is a good formula, but it will be advisable to have two kinds, one with, the other without aloes. The latter to be called "Mild Dinner Pills."

129/49. *J. T. B.*—Mahogany Stain—

Brazil wood	4 oz.
Caustic potash	1 "
Water	2 quarts.

Boil together for an hour, then strain, and to the liquid add 1 drachm of eosin.

A Drysalter.—Cheap Sauce.—The fermentation of this sauce (composed of vinegar, soy, spices, &c.) is prevented by the addition of 10 grains of common salt and 4 grains of boracic acid to each ounce.

American Scouring Soap.—What is it?

SAYS Mr. J. U. Lloyd, "I venture to predict that most of the active constituents to be eliminated from plants will be colourless," yet we must not assume "that all white principles are active," for example, *Tr. Apocyni cannabini* deposits "a white principle" which is cane sugar.

LUMINOUS PAPER.—Forty parts of paper pulp, ten parts of water, one part of gelatine, and one part of bichromate of potassium, with ten parts of phosphorescent powder, will make a paper luminous, suitable for labels, signs, &c.—*Western Druggist*.

Chiswick Soap Co.

CHISWICK, LONDON.

SPECIALITIES.

"Imperial" Brand,

In Tins for Domestic Use,
1, 2, 3, 3½, 4, & 7 lbs. each, net.
Also Firkins and Half-Firkins.

Sanitary Soft Soap,

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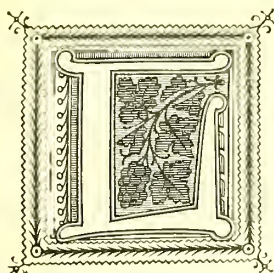
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HUNYADI JANOS WATER,

THE APOLLINARIS COMPANY, LIM.,

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FLUID EXTRACT OF CINCHONA,

made from *C. Califaya*, or *C. Succirubra*, containing the whole alkaloidal contents of the bark.

QUININE, CINCHONA ALKALOIDS,

Acids, pure.

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AND OTHER PHARMACEUTICAL CHEMICALS.

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GOLD MEDALS—DUBLIN, 1882; BOSTON, 1883;
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SIR JAMES MURRAY'S PURE FLUID MAGNESIA.

The ORIGINAL Article, as prepared by the Inventor, Sir James Murray, M.D.

For over 60 years in use as an excellent remedy in cases of
ACIDITY, INDIGESTION, HEARTBURN, GRAVEL, AND GOUT.
Sold by all respectable Chemists, in **LARGE-SIZED** Bottles (the 1s. size containing nearly
Double the quantity usually sold at that price), at **1/**, **2/6**, and **3/6** each.

CAUTION.—Observe that the Signature of the Inventor is on every label.

SIR JAMES MURRAY'S FLUID CAMPHOR

Is a valuable remedy in cases of **SLEEPLESSNESS** and **WEAK NERVES**. Bottles, **1/** and **2/** each.

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TOWLE'S CHLORODYNE

The Original Preparation, as approved by the Medical Profession
on account of its known composition and uniform strength.

Retail at **13½d.**, **2s. 9d.**, **4s. 6d.**, and **11s.**

We beg to inform our numerous customers, and the Trade generally, that we are **WITHDRAWING THE 4-OZ. AND 10-OZ. DISPENSING** sizes, and, instead, are putting up **AN 11s. RETAIL SIZE**. The wholesale price of the **4s. 6d.** and **11s.** will be at the same rate per oz. as the old 4-oz. and 10-oz. We shall still continue the undermentioned as usual.

LIQ. CHLORODYNE

As originally introduced by A. P. Towle, and free from stamp duty for dispensing. **4 oz.**, **½ lb.**, **1 lb.**

Also in quantities of **6 lbs.** and upwards at special quotations.

TOWLE'S CHLORODYNE LOZENGES AND JUJUBES,

In **1**, **2**, and **4 lb.** bottles, and **6d.** and **1s.** boxes. Foil lined, and neatly got up for the counter. Quantities of **7 lbs.** of Lozenges and upwards stamped with chemist's own name free of charge.

TOWLE'S (1s. 1½d. and 2s. 9d. per Box) ANTIBILIOUS PILLS.

SOLE PROPRIETORS OF

ESTABLISHED **THORNTON'S PREPARATIONS FOR THE HAIR.**

50 YEARS.

THORNTON'S TOILET CREAM, **1s.**, **1s. 6d.**, and **2s. 6d.** per Pot.

THORNTON'S LOTION AND AMBOLINE, each **2s. 6d.** per Bottle.

A. P. TOWLE & SON, Chlorodyne Manufacturers,

75 BACK PICCADILLY, MANCHESTER.

Show Cards and Bills with Name on application, with instructions for forwarding.

T. & H. SMITH & CO.,

EDINBURGH AND LONDON,

Are the **ONLY MANUFACTURERS** of the

SALTS OF MORPHIA

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GOLD MEDAL WAS AWARDED.

NEW YORK Office—20 Cedar Street: FRAS. JAS. MACNAUGHTAN, Agent.

[2]

GELATINE COATED OVAL PILLS.

The only Gelatine Coated Oval Pills of **ENGLISH MANUFACTURE** in the Market. Special List of **REDUCED PRICES** on application.

POWDERED DRUGS. All ground in our own Mills, and of Guaranteed Purity.

EXTRACTS (ENGLISH).

CONCENTRATED INFUSIONS AND DECOCTIONS. **GRANULAR EFFERVESCENT PREPARATIONS.**

GELATINE COATED HORSE BALLS (PATENTED).

Forwarded on application { **PRICES CURRENT, LIST OF SPECIALITIES, PILL LIST (GELATINE OR PEARL COATED).**

WYLEYS & CO., COVENTRY.

LONDON ADDRESS—1a BURY STREET, ST. MARY AXE, E.C.

NITROGLYCERINE TABLETS,

Tabellæ Nitrolycerini, B.P. 1885 (Martindale).

By authority of the Medical Council, the compilers of the British Pharmacopœia have adopted and made **OFFICIAL Nitroglycerine Tablets**, as manufactured by me during the last seven years.

The Nitroglycerine is in a perfectly fixed solution in the Chocolate. The Tablets are not prepared with Alcoholic solution of Nitroglycerine. They weigh **ONLY 2½ grains each**, an ounce containing about **170 doses**. They are sold at the following **REDUCED prices** to the trade, subject :—

In Boxes, Retail 2s. 6d. and 4s. 6d. each.

„ Trade 24s. and 43s. per doz.

FOR HOSPITALS AND DISPENSING:

In Bottles, Retail, 1-oz., 6s. 6d.; 2-oz., 10s.; 4-oz., 16s.; 8-oz., 27s.; and 16-oz., 48s. each.

„ Trade, „ 60s.; „ 96s.; „ 156s.; „ 264s.; „ „ 480s. per doz.

ORIGINAL INVENTOR—

W. MARTINDALE, PHARM. CHEMIST, 10 New Cavendish St., Portland Place, W.

MEDICATED LOZENGES.

T. BAGE BLYTON & CO.,
PHARMACEUTICAL CHEMISTS
(Successors to **RICHARD TWEMLOW**),

Manufacturers of **BRITISH and THROAT HOSPITAL PHARMACOPŒIA** and every other description of **MEDICATED LOZENGES.**

Sole Proprietors of **TWEMLOW'S CHLORODYNE** (extensively used in Hospital and Medical Practice during the past 15 years), **Chlorodyne Lozenges, Bronchial Lozenges, &c.**

TEREBENE LOZENGES, recommended for Winter Cough and Bronchitis.

PRICE LISTS ON APPLICATION.

T. BAGE BLYTON & CO., 76 Gordon St., Lower Broughton, MANCHESTER.

CHEAP GLASS FILTERS.

Style "K."

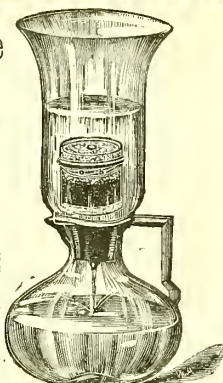
The **ONLY** Reliable
Filters.

Made at **OUR OWN**
Glass Works.
No Intermediate Profits.

STYLE "K."—Plain: 1 pint, 2/;
2 pints, 3/; 3 pints, 4/; Engraved:
1 pint, 2/6; 2 pints, 4/; 3 pints, 5/.

STYLE "L."—Plain: 1 pint, 3/;
2 pints, 4/; 3 pints, 5/; Engraved:
1 pint, 3/6; 2 pints, 5/; 3 pints, 6/.

STYLE "M."—Plain: 1 pint, 4/;
2 pints, 5/6; 3 pints, 6/6; Engraved:
1 pint, 4/6; 2 pints, 6/6; 3 pints, 7/6.

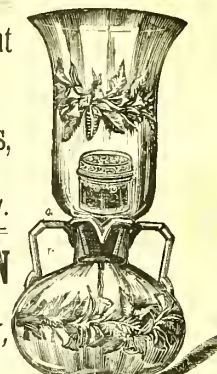


Style "L."

Very **LIBERAL** Discount
to the Trade.

Judson's GLASS WORKS,
ORMSIDE STREET,
OLD KENT ROAD, LONDON.

D. JUDSON & SON
(LIM.),
SOUTHWARK STREET,
LONDON.



Style "M."

FOR
DISPENSING, DRUGS,
OILS,
MINERAL WATERS,
PERFUMERY,
PATENT MEDICINES,
&c., &c.

GLASS BOTTLES

MANUFACTURED BY

KILNER BROS.

FOR
FEEDING.
In **GREEN &**
WHITE GLASS,
and all
Kinds of Fittings.
Best Quality.

No. 3 GREAT NORTHERN GOODS STATION, KING'S CROSS, LONDON.

HOME and FOREIGN BUYERS are invited to Correspond with us, as we have a very **LARGE SELECTION** to choose from.
Send for our Illustrated Price Current—a Revised Edition just out.

THE NORTH LONDON GLASS BOTTLE CO.

(I. ISAACS & CO., Proprietors).

OUR NEW SPÉCIALITÉ BOTTLES

THE HANDSOMEST DISPENSING BOTTLES MADE.

We supply them, 6-oz. and 8-oz., 10/ per gross; 3-oz. and 4-oz., 9/ per gross. Those requiring a first-rate Bottle should see them before ordering of any other house. We also continue to supply our Second Quality Bottles, with name in scroll if required, 6-oz. and 8-oz., 8/ per gross; 3-oz. and 4-oz., 7/ per gross. These are first-rate value for the money. White Labels at greatly reduced prices, which may be had on application; also a sample bottle of any kind sent free.

Bankers—London & Westminster Bank. Established 50 Years.

Warehouse: 25 Francis St., Tottenham Court Road, London, W.C.

ESTABLISHED 1851.

BIRKBECK BANK.—Southampton Buildings, Chancery Lane.

THREE per CENT. INTEREST allowed on DEPOSITS, repayable on demand.

TWO per CENT. INTEREST on CURRENT ACCOUNTS calculated on the minimum monthly balances, when not drawn below £100.

The Bank undertakes for its Customers, free of charge, the custody of Deeds, Writings, and other Securities and Valuables; the collection of Bills of Exchange, Dividends, and Coupons; and the purchase and sale of Stocks, Shares, and Annuities. Letters of Credit and Circular Notes issued.

The BIRKBECK ALMANACK, with full particulars, post free on application.

FRANCIS RAVENSCROFT, Manager.

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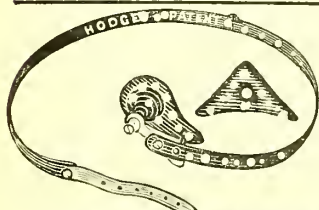
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PER MONTH, with immediate Possession and no Rent to pay. Apply at the Office of the BIRKBECK BUILDING SOCIETY, 29 Southampton Buildings, Chancery Lane.

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SHILLINGS PER MONTH, with immediate possession, either for Building or Gardening purposes. Apply at the Office of the BIRKBECK FREEHOLD LAND SOCIETY, as above.

The BIRKBECK ALMANACK, with full particulars, on application
FRANCIS RAVENSCROFT, Manager

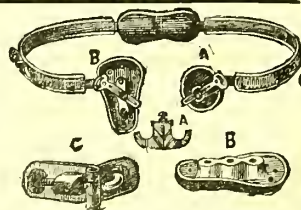


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The *Lancet*, in recommending Hodge's Truss, on Oct. 3, says:—"The pad gives an elastic pressure—a very great advantage—enabling it to be worn with great comfort. The truss is light, though strong; possesses such advantages that it is comfortable, adapts itself readily to the movements of the body, and is very effective."

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Continues to be prepared with scrupulous care in the greatest chemical purity, by

Messrs. **THOMAS & WILLIAM HENRY**, 11 East Street, St. Peter's, Manchester.

And is sold in bottles, authenticated by a Government Stamp bearing their Names and Trade Mark, "Henry's Calcined Magnesia."

Price **4s. 6d.**, or **2s. 9d.**

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IMPROVEMENT IN FEEDING BOTTLES.



SAVAR'S



BOXWOOD SCREW

FEEDING BOTTLES

(LAYCOCK'S PATENT).

We have much pleasure in informing the Trade that we have completed arrangements with the Patentee for the **SOLE** use of his Patent for **SAVAR'S** Feeders. The Screw Stopper, instead of being in Glass, is solid Boxwood, and will neither swell nor warp, and the improvement is obvious.

LIST AS FOLLOWS:—

- No. 7b. (SAVAR'S) White Bent Flint Glass, Boxwood Screw-neck Bottle, **BLACK** India-rubber Fittings and Earthenware Unions, Seamless Teat, with Bottle and Tube Brush complete, each in a neatly Labelled Box, 1s. retail; 8s. per dozen.
- No. 8a. (SAVAR'S) Green Bent Flint Glass, Boxwood Screw-neck Bottle, Black Indiarubber Fittings, Seamless Teats, in boxes of one dozen, 6d. retail; 4s. per dozen.
- No. 8b. (SAVAR'S) as No. 8a. but White Indiarubber Fittings, 6d. retail; 3s. 6d. per dozen.

SPECIAL QUOTATIONS TO BUYERS OF QUANTITY.

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LONDON:

EVANS, LESCHER & WEBB.

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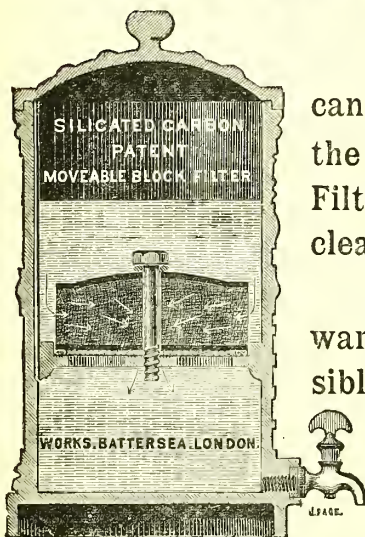
EVANS, SONS & MASON

(LIMITED).

MONTREAL, TORONTO, AND BOSTON, U.S.A.

SILICATED CARBON PATENT MOVABLE BLOCK FILTERS.

LIBERAL DISCOUNT TO THE TRADE.



(Section.)

Domestic Filters (as above), in Cream-coloured Stoneware, with Plated Taps and Patent Movable Blocks:—

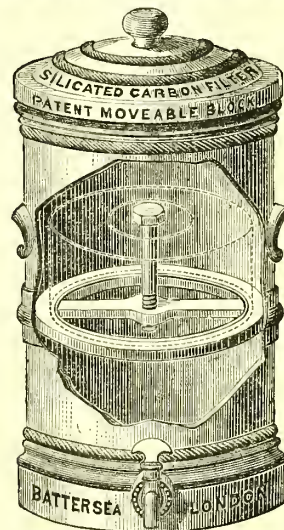
No. 27.	O. 1 gal. 10 6 each.	D. 6 gals. 42/- each.
	A. 1 „ 14/6 „	E. 8 „ 52/- „
	B. 2 „ 21/- „	F. 12 „ 70/- „
	C. 4 „ 32/- „	

In ordering please state “with patent movable block.”

The Silicated Carbon Block can be instantly removed, leaving the whole of the interior of the Filter OPEN for inspection and cleansing.

The working parts are stoneware, and no corrosion is possible.

No loose Pan or inner vessel to cause breakage.



(Elevation with Block removed.)

Dining Room Filters, in Marbled China, with Plated Taps and Patent Movable Blocks:—

No. 22.	A. 2 gals 35/- each
	B. 5 „ 80/- „

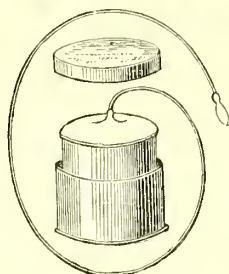
Refrigerative Terra Cotta, do. do. :—

No. 25.	2 gals. 31/6 „
---------	----------------

LIBERAL DISCOUNT TO THE TRADE.

POCKET FILTER.

PURE
WATER



No. 20.

[2]

FOR
TRAVELLERS

A. 2 1/2 inches diameter	.. .. .	2 6 each
B. 3 1/2 „ „	.. .. .	5- „
G. Ashantee pattern, as supplied to War Office	3 6	„
H. Fraser pattern, nickel plated	.. .. .	5/- „

ASCENSION TABLE FILTER.

No. 38.

PLAIN GLASS

No. 0. 1 pint	.. .. .	2 6 each
„ A. 2 „	.. .. .	4 „
„ B. 3 „	.. .. .	5/6 „

ENGRAVED GLASS

No. 0. 1 pint	3/6 „
„ A. 2 „	5/6 „
„ B. 3 „	7/6 „



FOR FULL ILLUSTRATED LISTS WRITE TO THE

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CHURCH ROAD, BATTERSEA, LONDON, S.W.

MAIGNEN'S PATENT "FILTRE RAPIDE."

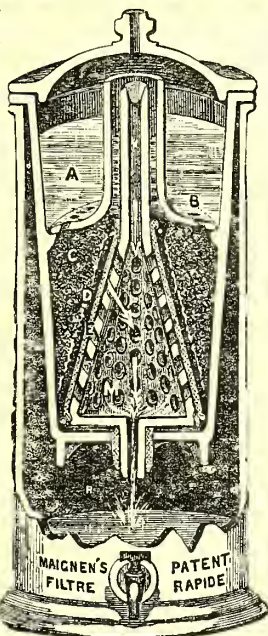
The only Filter
approved and used
by the
WAR OFFICE.

Five Medals,
International
Health
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London.

First Medals
everywhere.

The only Filter
recommended by
the Sanitary
Authorities.

Full Particulars and
Prices in Pamphlet
"Water, Preventable
Diseases, and Filtra-
tion," sent post free on
application to



Is guaranteed to
remove all germs
of disease and im-
purities in solu-
tion, such as
sewage and lead.
Can be cleansed
easily and the
Filtering Medium
renewed.

The supply of
Filtering Medium
is a constant
source of Profit
for the Chemist
who sells the
Filter.

The Author and
Patentee,
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32 St. Mary-at-
Hill,
LONDON, E.C.

MAIGNEN'S PATENT "ANTI-CALCAIRE" POWDER, FOR SOFTENING HARD WATER.

Throws down all the Carbonate and Sulphate of
Lime and Magnesia, and renders the Water perfectly
soft and clear, and suitable for Drinking, Washing,
and for Dispensing, &c.

Two Prize Medals, International Health Exhibition.
Two Certificates of Merit, Sanitary Institute.

SOLD IN TINS, WITH PRINTED DIRECTIONS, AT
2d., 6d., 1s., 2s., 3s. 6d., and 7s.

Wholesale London Agents—Barelay & Sons; Sanger &
Sons; Newbery & Sons; Edwards & Son; Sutton & Co.; Maw,
Son & Thompson; Lynch & Co.; Thompson, Millard & Co.;
May, Roberts & Co.; R. Hovenden & Sons; Burgoyne, Bur-
bidge, Cyriax & Farries; Baiss Bros. & Co.; Oppenheimer
Bros. & Co.; Butler & Crispe. **Exeter**—Evans & Co.
York—Raimes & Co.

Patentee—**P. A. MAIGNEN,**
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METHYLENE.

Obtained by the action of Metallic Zinc on Chloroform and Alcohol.

Discovered to be a general Anæsthetic by Dr. RICHARDSON in 1867.

1-lb. Bottles, 16s.; 8-oz., 8s. 6d.; 4-oz., 4s. 6d.; 2-oz., 2s. 6d.

COMPOUND ANÆSTHETIC ETHER,

For producing Local Anæsthesia.

In 4-oz., 10-oz., and 20-oz. Stopped Bottles, 2s., 4s., and 7s.

OZONIC ETHER.

In 2-oz., 4-oz., 8-oz., and 16-oz. Stopped Bottles, 2s., 3s. 6d., 7s., and 12s.

PEROXIDE OF HYDROGEN.

First introduced as a medicine by Dr. RICHARDSON.

ETHYLATE of SODIUM

(Dr. RICHARDSON'S Formula), for removing Nævi, &c. In 1-oz. & 1-oz. Bottles, with elongated Stoppers for applying the Caustic, 2s. 6d. & 4s.

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For promoting the Healing of Wounds by the first intention. In 2-oz. and 4-oz. Bottles, with brush, 2s. 6d. and 4s. 6d.; 16-oz., 12s.

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Containing Pure Vegetable Ivory Charcoal.

In Boxes, 2s. 6d. each.

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Manufacturing Pharmacists, Detroit, Mich., U.S.A.

Our Illustrated Pharmaceu-
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No. 83, of 100 pages

and 1,000 illustrations, sent
free to any part of the world
on application.

Established 1855. Largest Laboratory of its kind in the world.

**Manufacture FULL LINES of FLUID & SOLID
EXTRACTS, SUGAR, GELATINE and COM-
PRESSED PILLS, ELIXIRS, POWDERED
DRUGS, &c., &c.**

ORIGINATORS AND MANUFACTURERS OF POPULAR NON-SECRET MEDICINES.

Our NON-SECRET MEDICINES are Popular Remedies prepared for Household use, without secrecy or fraud, for the purpose of replacing patented or quack medicines. We sell them in all parts of the world. They are pharmaceutically prepared from best materials, according to reliable formulae, and cost the retailer much less than patents. Each package bears the retailer's address as proprietor. Externally they surpass in beauty anything ever offered to the trade. TWENTY THOUSAND RETAIL DRUGGISTS HANDLE THEM. Wrappers can be furnished entirely in any language, or English, with directions in Spanish, French, and German.

We deliver for export free at New York, New Orleans, or San Francisco.

We will send free on application our Illustrated Catalogue, No. 84, which fully explains plan and gives particulars. It contains 100 pages and 200 illustrations. Can be had in English or Spanish.

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OIL OF

ALMONDS

WRIGHT LAYMAN & UMNEY, SOUTHWARK-LONDON.

HUNTER'S LIGHTNING SIFTER & MIXER

FOR HAND AND POWER.

The Latest Invention of the Kind, and Acknowledged by All to be the BEST.

A necessary and valuable Machine for Manufacturing Druggists and Chemists, Perfumers, Bakers, Confectioners, Manufacturers of Baking Powder, Tooth Powder, Seidlitz Powders, Condition Powders, Snuff, &c., and for all who require a thorough Sifter and Mixer for Flour, Drugs, or Powders of any kind. These Machines are entirely new, are made strong, and will sift and mix as much in five minutes as other machines do in two hours. Every Wholesale Druggist should have one.

A SAMPLE TESTIMONIAL FROM ONE WHO KNOWS:

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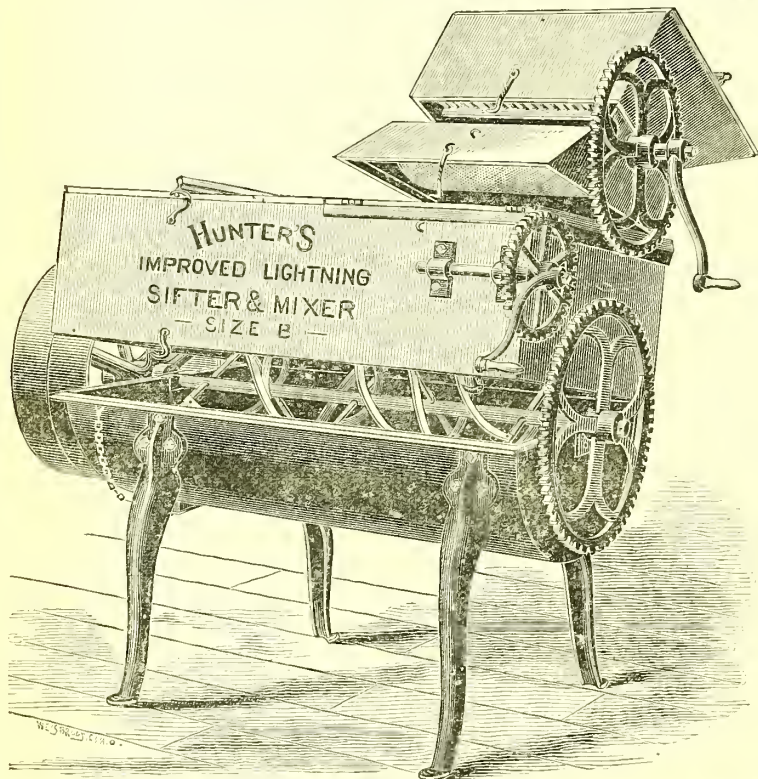
GENTLEMEN,—The combined Sifter and Mixer is the best machine I have ever seen for practically doing the work for which it was designed. I exhibited it before my class, and it has been receiving favourable comments from representatives from all parts of the country. Thanking you for your trouble, &c., I am, yours truly,

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We have about Three Hundred Testimonials from all Sources.



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PRONOUNCED BY EVERYBODY TO BE THE BEST EVER INVENTED.

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Every Machine leaving our Factories is fully warranted to be exactly as represented. Samples on exhibition at our offices. Send for Catalogue with prices, free on application.

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SIFTERS AND MIXERS

Made in all Sizes,

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SPECIAL MACHINES

And larger sizes made to order.

THE BEST AND CHEAPEST MACHINE MADE.

SIMPLE AND PRACTICAL.

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SIEVES, all Meshes, from 2 to 200,
IN ALL MACHINES ARE

INTERCHANGEABLE,

And the whole Machine can easily be taken
apart for cleaning.

Send for our Illustrated Catalogue.

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1886. IMPORTANT TO CHEMISTS. 1886.

THE GREAT CURE

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"IT CONQUERS PAIN!"

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FARADAY CHEMICAL WORKS, BIRMINGHAM.

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Telegrams—"FARADAY BIRMINGHAM."

TEREBENE, $C_{10}H_{16}$

An optically inactive isomer of Turpentine, free from undecomposed Turpentine, Colophene, &c.

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ACID HYDROBROMIC CONC., and B.P. LIQ. AMMON. FORT. '880.

PURE ACIDS—Sulphuric, Hydrochloric, Nitric, Phosphoric, &c.

HYDROCYANIC ACID (Scheele's and B.P.).

Special attention to the Supply of Chemicals required in the Arts and Manufactures.

Special Terms to Shippers and the Wholesale Trade.

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Manufacturers of all descriptions of PHARMACEUTICAL PREPARATIONS.
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AT ALL
EXHIBITIONS.

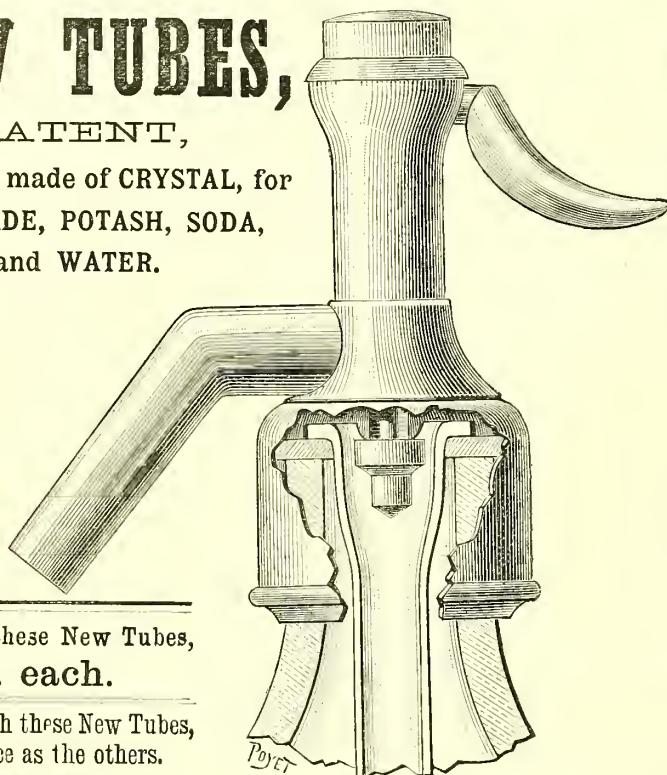
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PATENTED.

NEW TUBES,

PATENT,

ENTIRELY made of CRYSTAL, for
LEMONADE, POTASH, SODA,
and WATER.



PRICE of these New Tubes,
2d. each.

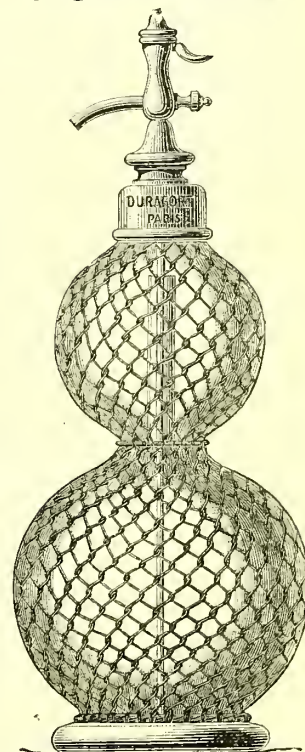
Syphons with these New Tubes,
same Price as the others.

TUBE ENTIRELY MADE OF CRYSTAL.

These New Patented Tubes suppress any metallic contact, and prevent, therefore, any decomposition forming a sulphurate of tin or silver, which imparts to the liquids contained in the syphons a disagreeable and unwholesome taste.

These tubes can be adapted to all sorts of syphons; those of metallic mounting can be removed, and supplanted by them.

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2 pints, 8/-; 3 pints, 9/-;
5 pints, 14/-.

Large Discount for Quantities.

SYPHONS OF ALL MODELS.

CYLINDRICAL OR OVAL SYPHONS In White or Coloured Crystal.	Second Quality	First Quality	Superior Quality
With Small Lever or Piston-Lever ...	£0 18 0	£0 19 0	£1 0 0
Large Lever	0 19 0	1 0 0	1 1 0

Nickel-plated Top, 2d. extra per Syphon. Silver-plated Top, first quality, 10d., second quality, 7½d. extra per Syphon. Half Syphons cost 1s. per dozen less. The Syphons are set up with fixed rings or loose rings. Bottle with rings, 10s., without rings, 8s. 8d. per dozen. Package per 100 Syphons, 8s. Weight of 100 Syphons, 4 cwt.

Pressing for setting up Syphons.

Pincers and Tools for Repairing.

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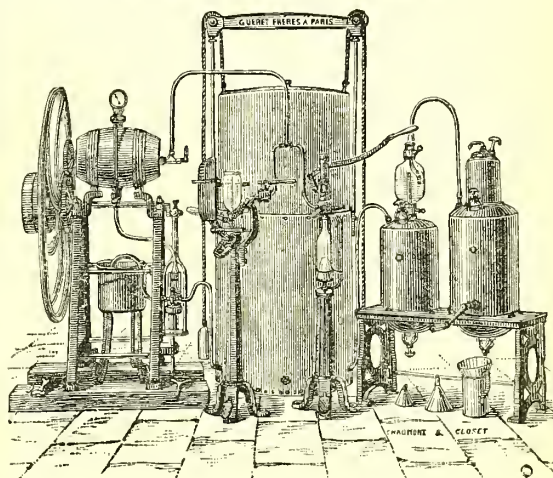
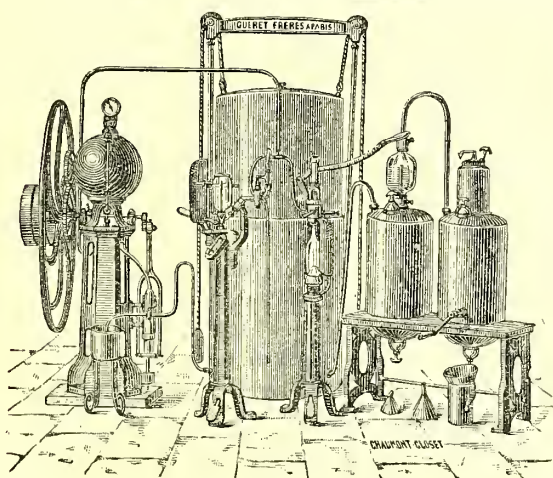
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COMPLETE CONTINUOUS APPARATUS, SPHERICAL OR PEAR-SHAPED.

The Saturator is of brass, guaranteed free from every defect in construction and perfect in action, tested at high pressure, combining economy with the greatest sanitary security, and enjoying an unrivalled reputation.



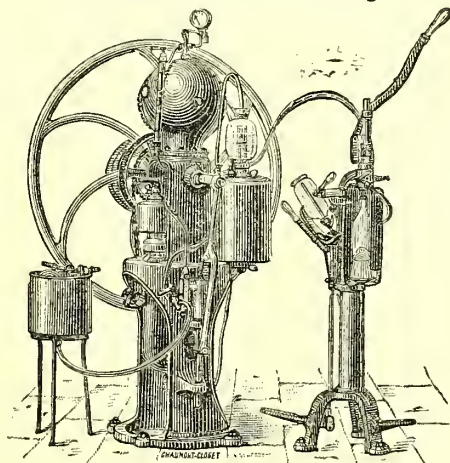
SYPHONS

With small levers, fittings of metal of highest quality, and best glass.



CONTINUOUS APPARATUS

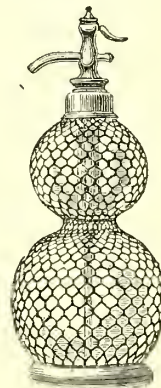
For the automatic generation of carbonic acid gas, the only practical system applicable to the manufacture of Aërated Beverages.



GAZOSELTZ

For the instantaneous production of Aërated Beverages at table.

Any one can use them.



FULL PARTICULARS AND GENERAL CATALOGUE SENT ON APPLICATION.

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CAUTION.—Circumstances which have come to the knowledge of Andreas Saxlehner, Buda Pest, Sole Proprietor of the Hunyadi János spring, compel him to WARN the British Public against SPURIOUS IMITATIONS. To secure genuineness, purchasers should see that every bottle has on the LABEL the name of "THE APOLLINARIS COMPANY (LIMITED), London."

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PEPPERMINT, &c.

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Labels and Titles protected. Write for Prices.

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AERATED WATERS,
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Each Bottle is protected by a Label bearing the Signature
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Purity and Excellence of the Water certified by Analysis
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INTERNATIONAL FOOD EXHIBITION, AGRICULTURAL HALL, LONDON, OCTOBER, 1880.
GOLD MEDAL, SOCIETY OF ARTS, PARIS, 1884.

TO AERATED WATER MANUFACTURERS.

Ginger Ale, Ginger Beer, and Lemonade, made from the following Essences, are unrivalled for their exquisitely fine flavour, and richness of aroma.

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ARE GUARANTEED TO BE THE FINEST IN THE MARKET.

HAY'S SOLUBLE ESSENCE OF JAMAICA GINGER.

A Pure Essence of the Finest Ginger, perfectly free from Capsicum. Highly adapted for the manufacture of Transparent Aerated Waters, and for all Dietetic, Medicinal, and Pharmaceutical purposes. Trade Price, 5s. per lb.; 12 lbs. and upwards, 4s. 6d. per lb. Extra Fine and Strong, 5s. 6d. per lb.; 12 lbs. and upwards, 5s.

HAY'S COMPOUND FORTIFIED ESSENCE OF JAMAICA GINGER. FOR FIRST QUALITY GINGER ALE.

Specially prepared for the manufacture of the very Finest Ginger Ale made, is an addition of Vanilla, Lemon, and other flavours to the above. It imparts, with the exquisite Ginger Aroma of the above-mentioned Essence, a peculiarly fine fruity flavour, combined with the fullest amount of fragrance and pungency. Trade Price, 5s. 6d. per lb.; 12 lbs. and upwards, 5s. Extra Fine and Strong, 6s. per lb.; 12 lbs. and upwards, 5s. 6d. Quantity required, five fluid ozs. to each gallon of Syrup, making 106 10-oz. Bottles.

HAY'S GINGER ALE EXTRACT. FOR SECOND QUALITY GINGER ALE.

This Extract is strongly recommended for the manufacture of Ginger Ale, to which it imparts Pungency, Colouring, great Brilliancy, and an unusually Fine Ginger Flavour and Aroma, and makes a thoroughly good article. Trade Price, 4s. 6d. per lb.; 12 lbs. and upwards, 4s. Quantity required, three fluid ozs. to each gallon of Syrup, making 106 10-oz. Bottles.

HAY'S GINGER ALE ESSENCE. Highly Concentrated. FOR THIRD QUALITY GINGER ALE.

This Essence, which is a complete Bouquet of Flavours in a highly concentrated state, makes a Ginger Ale possessing an amount of aroma, flavour, and quality that will be sure to command a large sale, and that is unsurpassed by the so-called finest Belfast Ginger Ale. Trade Price, 9s. per lb.; 12 lbs. and upwards, 8s. 6d. Quantity required, half a fluid oz. to each gallon of Syrup, making 106 10-oz. Bottles. This Essence will be found most valuable to the general trade.

HAY'S SOLUBLE ESSENCE OF MESSINA LEMONS.

A magnificent Preparation, perfectly soluble, and makes the finest Lemonade obtainable. Trade Price, 8s. 6d. per lb.; 12 lbs. and upwards, 8s. "Added in the proportion of one fluid oz. to each gallon of Syrup, the Soluble Essence imparts the most delicious flavour of the Lemon."—*The Chemist's Journal*.

HAY'S GINGER CHAMPAGNE ESSENCE.

For the manufacture of Ginger Champagne. This Essence is a combination of the finest flavours, and imparts with the Ginger a most exquisite aroma, making a most delicious and refreshing approximation to Champagne. Trade Price, 8s. per lb.; 12 lbs. and upwards, 7s. 6d. per lb. Quantity required, ten fluid ozs. to each gallon of Syrup, making 106 10-oz. Bottles.

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Tonic Ale made from this Essence is strongly recommended as a most agreeable, non-intoxicating, and appetising beverage, in the place of Bitter Beer. Price, 6s. 6d. per lb.; 12 lbs. and upwards, 6s. Quantity required, 5 fluid ozs. to each gallon of Syrup making 106 10-oz. bottles.

NOTE.—The above are specially recommended to manufacturers requiring the very finest Essences obtainable. There is nothing in the market to equal them.

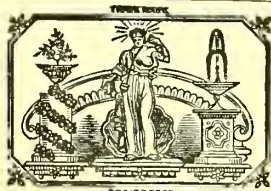
A FEW OF THE MANY REPORTS OF THE LEADING HIGHEST MEDICAL AND OTHER JOURNALS ON MY PREPARATIONS ARE HERE QUOTED:—

SOLUBLE ESSENCE OF GINGER.—"It should entirely supersede the official preparation of the British Pharmacopoeia."—*Medical Press*. "This Essence is of a very delicate and beautiful appearance, the aroma is fine and powerful, and its strength is very great indeed. The flavour is really exquisite, and it concentrates in quite an extraordinary degree the very best aromatic qualities of ginger."—*Drinks*, London, Sept. 1, 1884.

GINGER CHAMPAGNE MADE FROM HAY'S ESSENCE.—"An excellent and most agreeable beverage."—*The Lancet*. "One of the most delicate and wholesome drinks in the market."—*Medical Press*. "The fine Aroma of Ginger which Mr. Hay has caught with remarkable success is an excellent substitute for Alcohol, as it gives what old port wine drinkers used to call 'body,' and to many people besides professed teetotallers, an occasional change at least from the Royal French Beverage to its less costly, but equally sparkling and more refreshing, English rival is a welcome treat."—*The Chemist and Druggist*.

GINGER ALE MADE FROM HAY'S FORTIFIED ESSENCE.—"It pours out with as fine a 'head' as any glass of ale, and possesses all the fine aromatic flavour of the pure ginger. It is a beverage which is sure to win favour wherever introduced."—*The Chemist and Druggist*.

The difference between preparations made from the above Essences and those made from the numerous spurious imitations of the above, bearing the name of Soluble Essences, is most marked, and no manufacturer using the latter can compete with one using Hay's Preparations, as is universally known. *The greatest care is used in packing for Export.*



W. HAY, MANUFACTURING CHEMIST, ENGLAND

BEVERLEY ROAD, RULL,

Indentors, to prevent disappointment, should specify that the goods are to be of Hay's Manufacture.

W. HAY CAUTIONS THE TRADE against the use of those spurious so-called SOLUBLE ESSENCES which, besides having NO GINGER AROMA, are FLAVOURLESS, RANK, and DISAGREEABLE, and are little more than TINCTURES OF CAPSICUM.

HORSE, CATTLE, AND SHEEP MEDICINES.

BY ROYAL APPOINTMENT.



By Special Warrant,
Dated 27th December, 1865.

DAY, SON & HEWITT,

INVENTORS AND SOLE PROPRIETORS OF THE



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Containing the following Matchless Remedies for all Disorders in Horses, Cattle, Calves, Sheep, & Lambs:

THE CHEMICAL EXTRACT.

For assuaging pain and inflammation in all wounds, saddle galls, strains, bruises, and swellings in horses; for paining after calving and lambing, and for swollen udders and sore feet. $\frac{1}{4}$ -doz. box, 7s. 6d.

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Celebrated for inflammatory disorders; such as fevers, pleurisy, foot-and-mouth complaint, yellows, surfeit, and red water. Also for difficult calving and lambing. 3s. 6d. and 13s. per dozen box.

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Unmatched for colic or gripes and debility in horses. For colds, chills, shivering fits, and diarrhoea in cattle, calves, and sheep. 20s. per dozen box.

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A warm stomachic in severe diarrhoea or flux, by way of change of the gaseous fluid in great irritation of the bowels. $\frac{1}{4}$ -dozen box, 10s.

Price of Chests, with "Guide to Farriery"—No. 1, £6/6/0; No. 2, £2/16/6; No. 4, £2/7/6 (for horses only). Carriage paid.

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Distemper, Tonic, Condition, Worm, Purging, Jaundice, Diarrhoea, and Cough Balls, Katakalepra (for Mange), Ear Canker Specific, Japanese Soap and Insect Powder, Worm Powders, &c.

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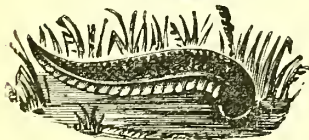
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Patent No. 3988.

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(Signed) A. H. HASSALL, M.D., Lond.
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THE CROWN SOAPS, finest quality, richly scented, 84/ per cwt.

BEST OLD ENGLISH TRANSPARENT SOAP, unscented, 36/ per gross.

"	"	"	"	"	highly perfumed, 72/ per gross.
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INVIGORATING LAVENDER SALTS, Registered.—The new and popular smelling salts, 16/ per dozen.

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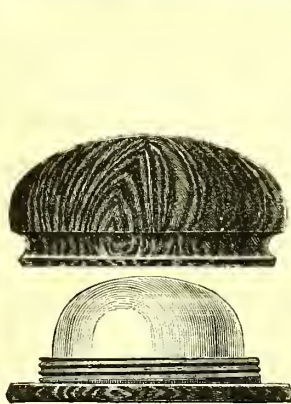
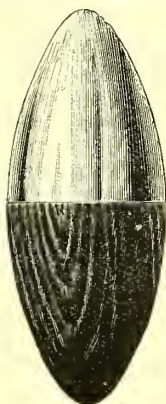
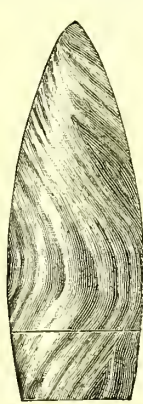


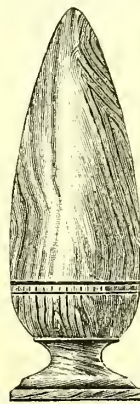
Fig. 1.



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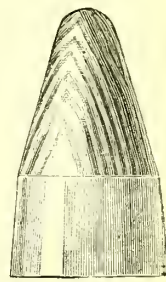
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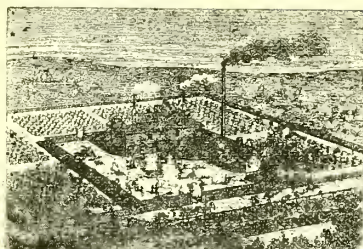
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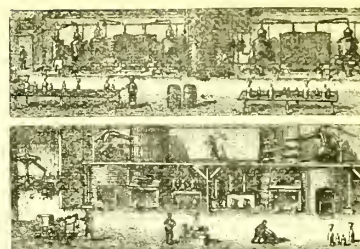
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| | " | in Boxwood Cases | ... | " | 7/6 |
| Fig. 2. | MAW'S MENTHOL, | portable, with Screw Metal Caps | ... | " | 7/6 |
| | " | 1 dozen, on Wire Stand | ... | " | 8/6 |
| Fig. 3 & 4. | MAW'S MENTHOL, | in Boxwood Cases | ... | " | 4/- and 7/6 |
| Fig. 5. | MAW'S MENTHOL, | in White Opaque Glass Jars with Red Celluloid Caps | ... | " | 4/- and 7/6 |
| Fig. 6. | MAW'S MENTHOL, | on Wood, in Glass Bottles | ... | " | 7/6 |

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LAVENDER OILS, &c.**
STEAM DISTILLERIES:
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GOLD MEDAL,



PARIS, 1885.

SILVER-GILT MEDAL,



MELUN, 1880.

SILVER MEDAL,



ANTWERP, 1885.



TRADE MARK.

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T. REDWOOD, Ph.D., F.I.C., F.C.S., &c.

Emeritus Professor of Chemistry and Pharmacy to the Pharmaceutical Society of Great Britain.

Our Essences are put up in Bottles of $\frac{1}{4}$, $\frac{1}{2}$, 1, 2 and 5 lbs.

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MITCHAM LAVENDER and CAMOMILE OILS, Extra Fine (in same quantities as Peppermint), at Market Price.

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TRANSPARENT GLYCERINE SOAP, Manufactured with Pure Spirits of Wine and Purest Glycerine. The first Soap of this description introduced in this market, and still recognised the best. Prices have been reduced lately.

PURIFIED TOILET SOAPS, Highly Scented. Large variety of such delicate Scents as Ess. Bonquet, Jockey Club, Musk, Oppoponax, Rose de Mai, New Mown Hay, Violet, Lavender, Tea Rose, Mignonette, and many other distinct Perfumes.

CALCUTTA GOLD MEDAL EXHIBITION SOAP, assorted in 12 different scents and colours.

WINDSOR, HONEY, OATMEAL, COAL TAR, CARBOLIC, and all kinds of ordinary Toilet Soaps.

EXTRACTS OF FLOWERS, Triple, Double, and Simple.

FLORAL PERFUMES, with appropriate Silk Flower Labels. See special notice in THE CHEMIST AND DRUGGIST, July edition, 1885.

LAVENDER WATER, FLORIDA WATER, EAU DE COLOGNE, and all other Toilet Waters.

COLONIAL TOILET WATER—an excellent composition for use in hot climates.

DENTIFRICE, VIOLET POWDER, and all other Requisites for the Toilet.

PETROSINE POMADE and PETROSINE IN BULK—a Petroleum Jelly, guaranteed never to turn rancid.

MANUFACTORIES { 38 MORELAND STREET (late Charles Street), CITY ROAD, LONDON, E.C.,
and at OFFENBACH o/MAIN, GERMANY.

INDEX TO ADVERTISEMENTS,

See Pages iii-iv.

EAU DE COLOGNE

OF THE MOST ANCIENT DISTILLER,

JOHANN MARIA FARINA,

Opposite the Julichs Place, COLOGNE.

ESTABLISHED A.D. 1709.

PRIZE MEDALS:—LONDON, 1851 AND 1862; OPORTO, 1865; PARIS, 1867; VIENNA, 1873.

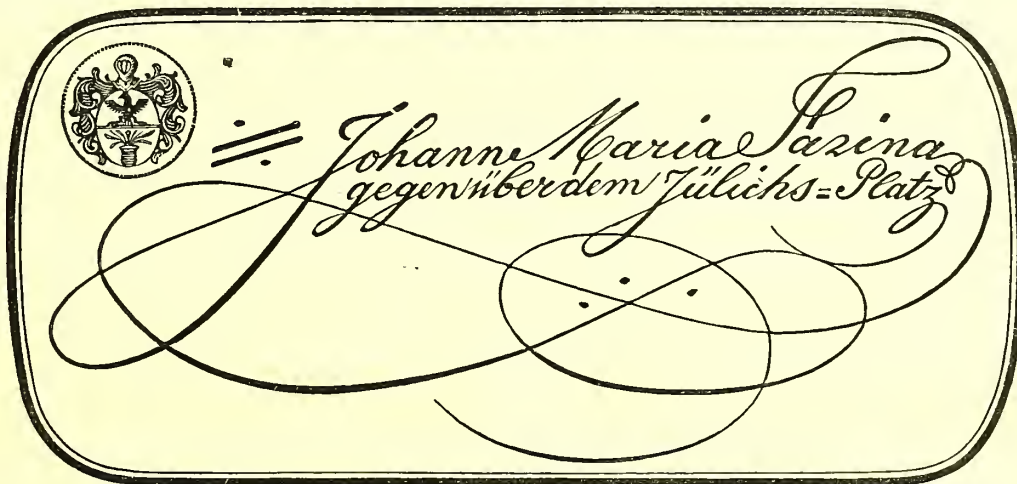
By appointment, Sole Purveyor to Her Most Gracious Majesty Victoria, Queen of Great Britain & Ireland; Their Royal Highnesses the Prince and Princess of Wales; William, King of Prussia;



Albert II., King of Saxony; Alexander II., Emperor of Russia; Francis Joseph, Emperor of Austria; Lewis, King of Portugal; H.R.H. Frederick William, Crown Prince of Prussia.

In consequence of increasing inquiries from the Colonies for my Eau de Cologne, the only genuine, I beg to submit my Price Current.

At the same time I beg to call special attention to the following facsimile of my Trade Mark, for the protection of which I have instituted thirteen suits in the High Court of Chancery, all of which have been decided in my favour.



All similar Labels being more or less imitations of the same, I shall proceed as before against all persons selling or exposing for sale any such imitations.

I only prepare one quality of Eau de Cologne. This quality never varies in the slightest degree, and there has not been the smallest change in the manufacture since the year 1709, when it was invented by my ancestor.

Orders equal to at least 12 dozen short bottles will be promptly executed at 12s. 6d. per dozen, against my bill drawn at three months from the date of invoice, delivered free on board the export ship, at Rotterdam, Antwerp, Hamburg, or Bremen, no charge being made for the case and packing, but insurance charged extra. 7½ per cent. discount is allowed for orders equal to at least 100 dozen, but on no smaller quantities.

I may add that, as I do not draw on the Colonies, all Orders must be accompanied by a credit on some London House, or permission to draw on same at three months.

The Goods can also be shipped in transit through London at a very small additional expense, full particulars of which may be obtained of my Sole Agents for Great Britain and Ireland:—

MESSRS. J. & R. McCracken,

No. 38 Queen Street, Cannon Street, London, E.C.

The following are the sizes of my bottles:—

No. 1. Long Green Flasks	12 bottles	} to one dozen.
" 2. Short White Bottles	...	...	...	...	...	12 "
" 3. Double ditto	...	...	...	...	...	6 "
" 4. Wickered Bottles (small)	...	...	...	...	...	8 "
" 5. ditto (medium)	...	...	...	...	...	4 "
" 6. ditto (large)	...	...	...	...	...	2 "

JOHANN MARIA FARINA,

OPPOSITE THE JÜLICH'S PLACE.

HORN & SON PATENT AGENTS.

Manufacturers' Designs and Trade Marks Registered.
SOMERSET CHAMBERS, 151 STRAND, LONDON.

Guide to New Patent Law and Registration gratis.

DR. G. H. JONES, F.R.S.L., &c,

SURGEON-DENTIST,

57 GREAT RUSSELL STREET, LONDON
(Facing British Museum entrance),

Will forward his New 64-page Pamphlet, entitled "PAINLESS AND PERFECT DENTISTRY," which contains a List of the Diplomas, Gold and Silver Medals, and other Awards obtained at the Great International Exhibitions, to any part of the world, gratis and post free. Agents Wanted.

EDWD. S. T. STANTIAL, WHOLESALE AND RETAIL DRUGGIST, PIETERMARITZBURG, NATAL.

London Agents. Messrs. HAWKES, SOMERVILLE & CO.,
1 WHITTINGTON AVENUE, E.C.

TO LET.

SAVE OVER 20 PER CENT. BY USING PARAFFINUM MOLLE. P.B.

(REFINED IN VACUO.)

A translucent, perfectly neutral, inodorous, tasteless, and soft (not granular) hydrocarbonaceous jelly. Sp. gr. at melting point, 0.868. Soluble in ether. Cannot become rancid or saponified. Prices—Yellow, 5 lbs., 3/4; 40 lbs., 21/4. White, 5 lbs., 5/4; 40 lbs., 33/4. Tins free.

PARAFFINUM DURUM. P.B.

Answers all Pharmacopœia "characters and tests." 9d. per lb. Sample pound of either by parcels post, 1/-. Process supervised by

CHARLES SAUNDERS, Analytical and Manufacturing Chemist,
6 Rochester Sq., N.W. Special quotations to Wholesale Houses.

Medical and Sanitary
Exhibition, 1881.

DIABETES

AWARD OF MERIT.

VAN ABBOTT'S GLUTEN BREAD,

And all other suitable Foods for Diabetic Patients.

Dietary Tables and Price Lists post free on application.

VAN ABBOTT, 5 Princes Street, CAVENDISH SQ., W.



ASSAY FURNACES, &c. THE MORGAN CRUCIBLE CO.,

Sole Manufacturers of
MORGAN'S and SALAMANDER CRUCIBLES,
BATTERSEA, LONDON, S.W.

All kinds of Crucibles in Plumbago, Clay, &c.,
Single and in Sets.
Muffles, Portable Assay and Melting Furnaces, &c.

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PURE PRECIPITATED CHALK.

Cheapest Sellers in the Market.

Chemicals, Drugs, and Oils at lowest market rates.

APPLY TO

AUG. LEVERMORE & CO.,
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PETROLEUM JELLY,

EQUAL TO AND CHEAPER THAN VASELINE.

SANITARY FLUID AND SHEEP DIP,
THE CHEAPEST AND BEST DISINFECTANT.

GREASE, PITCH, ASPHALTE, AND ALL PRODUCTS OF TAR AND ROSIN.
Samples and Prices on application.

GRINDLEY & CO., POPLAR, LONDON, E.

GUSTAV MENTHOL

AGAINST NEURALGIA &
In Nickelled and Gilt



MENTHOL CONES

BOEHM'S CHARMS,

NERVOUS HEADACHE,
Metal Cases, 6/ per doz.

IN HARD WOOD BOXES,
2/9 and 4/ per doz.

Manufactories—38 MORELAND STREET (late Charles Street), CITY
ROAD, LONDON, E.C.; and at OFFENBACH O.M., GERMANY.

Critchley's Starch Gloss

Makes Starched Linen like new. Does not stick to spider-like Materials.
Once tried always wanted. Used in the Royal Laundries. Sold every-
where, in Packets, 1d., 3d., 6d., and 1s. each. Write for quotations.

Prepared only by
T. CRITCHLEY,
BLACKBURN, and
1 & 2 Australian Avenue,
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A. S. LLOYD'S EUXESIS,

For SHAVING without SOAP, WATER or BRUSH,
And in one half the ordinary time.

AIMÉE LLOYD 3 Spur Street, Leicester
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(Widow of A. S. LLOYD)

S. SAINSBURY'S

MANUFACTORY—
176 & 177
STRAND, LONDON.

Lavender

In Bottles, from 1/ to 6/; in Cases, from 3/ to
15/6.

TRADE TERMS ON APPLICATION.

Water.

W. GILBERT,

WHOLESALE HOMŒOPATHIC CHEMIST,
15 COMMERCIAL ROAD, BOURNEMOUTH,

Will supply Chemists (for cash with order only)

6d. Bottles Pilules, or Tinctures, 2s. 8d. per dozen.
1s. " " " " 5s. 8d. "

Carriage paid to any part of the United Kingdom.
In ordering, please state if 1X or 3X Attenuations are preferred.

THE PERFECT SURGICAL BANDAGE.

Preferred to all Makes hitherto used.

In Cases of Twelve Six-yard Rolls, 2 inches wide, 3s. 9d.; 2½ inches, 4s. 6d.;
3 inches, 5s. 6d.; or, Case containing twelve Six-yard Rolls
of each width, 13s.

Free by post, to any address in the United Kingdom, for prepaid orders only.

MANUFACTURED BY THE

Bole Hall Mill Company, Tamworth, Staffordshire.

"SPÉCIALITÉ" LIME JUICE

(NO MUSTY FLAVOUR).

For Sample and Terms

FELTOE & SONS,

ALBEMARLE STREET, LONDON, W.

Can be obtained through the Wholesale Houses.



CURL AND TOILET PAPERS,

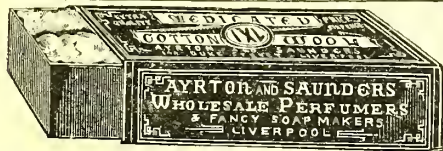
Plain and Medicated, Wrapped or in Hanging Cartons.

CURL PAPERS in Wrappers, retail 4d. each; per dozen, 2s. 8d.

" " as *sketch*, very saleable, retail 6d. each; per dozen, 3s. 9d.; per gross, 40s. nett.

" " MONROE'S, in HANGING CARTONS, Extra Tough Paper, retail 6d. each; per dozen, 4s.

ANTISEPTIC TOILET PAPER, Monroe's Perfumed, in HANGING CARTONS, very tough, but dissolves readily and does not clog the pipes; per dozen, 8s.



MEDICATED COTTON WOOL,

Best quality. Handsomely got up. Expressly for the Retail Trade.

Bronze and Gold Wrappers on Boxes. 6d. Boxes 3s. dozen; 1s. Boxes 6s. dozen.

ABSORBENT WOOL, same size and style, 3s. 6d. and 7s. dozen.



BLUE AND WHITE CHINA PAP BOATS.

Best Quality Ware. A most saleable Sixpenny line, and one of the cheapest in the trade. Price 4s. per dozen.

SAMPLES OF ANY OF THE ABOVE SUBMITTED ON APPLICATION.

We also offer special facilities to Chemists desirous of introducing articles bearing their own name and printed matter, and shall be glad to furnish detailed information and quotations to any of our correspondents.

A GOOD LINE IN DYES WILL ALWAYS COMMAND A SALE.

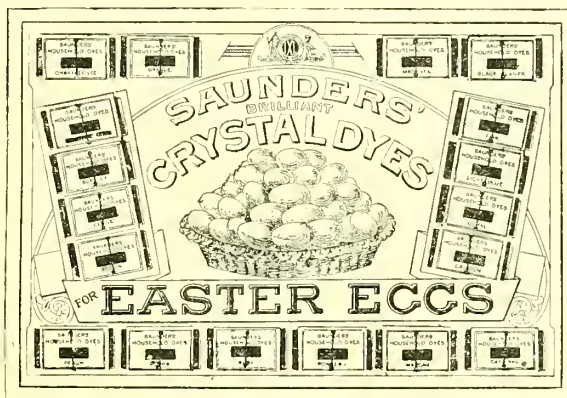
DO NOT DELAY! WRITE AT ONCE!!

And secure a most attractive and saleable Spécialité for DISPLAY & WINDOW DRESSING.

SAUNDERS' BRILLIANT DYES FOR EASTER EGGS.

COLOURS OF DYES.

BLACK	LAVENDER
BROWN—	LILAC
LIGHT	MAGENTA
DARK	MAUVE
GOLDEN	MARONE
BLUE—	MOSS
LIGHT	ORANGE
DARK	PEACH
NAVY	PINK
ELECTRIC	PLUM
BRONZE	PONCEAU
BUTTERCUP	POPPY
CANARY	PUCE
CARDINAL	PURPLE
CHARTREUSE	ROSE
CLARET	RUBY
CORAL	SALMON
CREAM	SCARLET
CERISE	SLATE
CRIMSON	STRAW
CRUSHED	SULTAN RED
STRAWBERRY	TABAC
FAWN	TERRA COTTA
GOLDEN	TUSCAN
YELLOW	VIOLET
GREEN	YELLOW
GREY	



LIST OF PRICES.

1d. packets, 7/- per gross.
Display Card, containing
18 doz. assorted, for 10/6.

3d. packet, 21/- per gross.
Display Card, containing
6 doz. assorted, for 10/6.

Specimen of Display Card worked up in brilliant colours—the Dyes attached—the whole in a handsome Gilt Frame.

THERE IS NOTHING LIKE IT IN THE TRADE.

A Sample Card of 1d. or 3d., containing the most saleable colours, sent carriage paid on receipt of Postal Order to the value of 10/6. Money returned if the Goods are not approved of.

SOLD BY CHEMISTS AND DRUGGISTS ONLY.
WHOLESALE FROM

AYRTON & SAUNDERS

DYE MERCHANTS, 149 DUKE STREET, LIVERPOOL.





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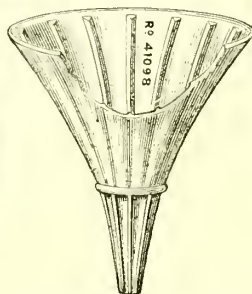
PRIZE MEDAL,



SYDNEY, 1879.

NEW

REGISTERED



FUNNELS.

Registered No. 41098.

PRICES.

Nos. ...	...	1	2	3	4	5	6	7	8	9
Capacity ...	...	1 oz.	2 oz.	4 oz.	8 oz.	1 pt.	1½ pt.	2 pt.	2½ pt.	3½ pt.
Per dozen...	...	7/	8/	11/	16/	24/	30/	40/	48/	60/

LESS USUAL DISCOUNT.

In bringing to the notice of the Trade our New Registered Funnels, we cannot do better than subjoin a Testimonial to their increased practical efficiency, given, after careful test, by Mr. Charles Umney (Messrs. Wright, Layman & Umney), and feel sure that any addition on our part to his testimony would be superfluous.

TESTIMONIAL.

MESSRS. LYNCH & CO.,
ALDERSGATE STREET.

50 SOUTHWARK STREET,
LONDON, S.E.

11th January 1886.

DEAR SIRS,

My assistants have tried, in my firm's laboratory, your new Funnel, and filtration is 25 per cent. faster through it than through the old form of funnel.

Faithfully yours, (Signed) CHAS. UMNEY.

LYNCH & CO., LONDON.

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